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Writing code, decoding culture: Digital skills and the promise of a fast lane do decent work among refugees and migrants in Berlin

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Abstract: The digitisation of work poses global challenges but also offers new employment opportunities. This article explores the experiences of refugees and migrants who study at coding schools in Berlin to pursue digital careers. Attracted by the promise of coding as a fast lane to decent work, these newcomers hope to circumvent barriers of the local labour market, such as the need for local language skills and accredited qualifications. But many coding students realise that the fast lane they have entered is not so fast after all, and that it is scattered with obstacles and uncertainties. The ostensibly inclusive tech sector emerges as highly competitive and demands total commitment, passion, and a “culture fit”: alongside learning to code, they must learn to decode the behavioural and cultural specifics of an international tech sector. Coding thereby becomes a digital extension of the demands and expectations of national integration. As migrants and refugees hope that digital skills will lead to decent work, respectability, and middle-class status, they experience a contradiction between aspirations that are said to be universal, because anyone can in theory succeed as a coder, and recurring experiences of discrimination and precarity.

Key Words: Digital skills, digital labour, coding, refugees, migrants, integration

Introduction

The rapid spread of tech-enabled projects was a defining feature of responses to the arrival of close to one million asylum seekers to Germany in 2015. This response saw the emergence of digital skills training and entrepreneurship programmes, job-matching platforms, and numerous hackathons that developed tech solutions for the challenges that refugees faced. Coding schools that emerged in the wake of the “refugee crisis” signify a broader trend of finding technological answers to the challenges of integration (Gregg 2015). Such “civic tech” for social good is led by a “new breed of technologically savvy groups and organisations” (Mason et al. 2017; 2018). Some take inspiration from a “techno-optimistic” belief that technology has improved our lives for the better and that digital technology is likely to do so in the future (Kaurin 2020, 4). These actors promote an entrepreneurial approach to refugees’ economic challenges, framing digital careers as a speedy route to self-reliance and labour market integration (Embiricos 2020).

Berlin was at the centre of these initiatives as people from its vibrant technology and start-up sector linked their efforts to a wider “welcome culture” that defined the official German response. The arrival period saw an explosion of “tech-based solutions” to improve the integration experience of refugees: in 2016 alone, 54 out of a total of 106 tech-related projects for refugees in Germany began in Berlin (Mason et al. 2017). While many of these initiatives soon ran out of steam, coding schools have expanded and endured, such as the ReDI School of Digital Integration. Since 2016 it has aimed to train refugees and migrants to fill some of the thousands of vacant positions in the IT sector in Germany. Teaching these “newcomers”¹ how to code thereby becomes a stepping-stone to skilled employment and by extension, a key component of economic and social integration. The prospect of such “digital integration”² instils powerful aspirations in newcomers who realise that their positive validation as migrants is made conditional on their professional success and economic contribution. Their hopes build on the idea that there is a parallel digital labour market where the cultural and bureaucratic characteristics that define national labour markets matter less. This idea resonates among migrants because their entry into skilled jobs in Germany has long been limited by discrimination and “institutionally and culturally delineated skill criteria” (Liu-Farrer and Shire 2020, 2).

Despite its inclusive potential, our research shows that the tech sector cannot simply transcend the inequalities and barriers that define migrants and refugees’ pathways into national and urban labour markets. Global cities have long used migrants to fill low-paid roles

¹ We use the term “newcomers” for both migrants and refugees to mirror its preference by digital skills training providers who use it to reflect the diversity of statuses among coding students. “Newcomer” captures both being “new” to Germany and to the IT sector.

² We use the term “integration” in the sense of inclusion in the (digital) labour market while also reflecting demands for cultural and social adaptations in the immigration regime and in the tech sector. We acknowledge the problematic nature of the term as an imaginary of the nation-state that imposes hierarchies of dominance and seeks to maintain societal status quos (Easton-Calabria and Wood 2020).

as part of a “migrant division of labour” (Sassen 1991; Snel et al. 2007). The gig economy has somewhat mirrored this division, as large numbers of migrants now work in self-employment for digital labour platforms (van Doorn, Ferrari, and Graham 2020). Although digital training graduates in Berlin sometimes ended up in the gig economy, they did not aspire to become freelancers on platforms. A high demand for skilled IT workers and labour market access created realistic expectations for secure employment and permanent residency. Learning to code is not an entirely free choice, however. Many consider coding as a fast lane to employment because they do not qualify for other skilled work, due to a lack of language skills and because they can often struggle to accredit their pre-existing qualifications. While some have relevant university degrees and skills when they join coding schools, many have little pre-existing knowledge in computer programming. As lawyers and university graduates start from scratch to become coders, they must be re-skilled as a result of their de-skilling or “brain abuse” (Bauder 2003).

Digital capitalism and production in global high-tech hubs has long built on migrants and IT specialists from the Global South, who often faced precarious employment conditions and insecure legal statuses (Biao 2007). Berlin has pulled Indian IT experts and other non-white migrant workers into its international digital economy, where they often worked in short-term employment without secure residency. This incorporation inscribes a contradiction into the experiences of skilled migrants, who become racialised subjects of the German immigration regime but are simultaneously middle-class professionals with high career aspirations in the international technology sector (Amrute 2016). At heart, this contradiction is one between a universal aspiration and a particular experience: promises of social mobility for *anyone* in the tech sector instil a universally accessible “vision of success” in skilled migrants that is rarely matched by their individual experience (Amrute 2016, 2). A similar “vision” has defined “aspirational” and “hope” labour in digital capitalism more generally, where people value un- or underpaid labour and other productive activities because they hope it will produce future social and economic capital (Duffy 2015; Kuehn and Corrigan 2013).

In the following we explore the powerful hopes migrants and refugees invest into coding and aspirational labour as crucial steps on an ostensibly fast lane to decent work. We show that this powerful promise is often met by experiences of discrimination, uncertainty, and barriers to accessing decent work. Coding for newcomers is seen to represent an accelerated path to economic integration and social mobility that circumvents barriers to integration in Germany, while simultaneously implementing the call for skilled, self-sufficient, and entrepreneurial migrants that define the national immigration regime. Upskilling migrants and refugees for work in the IT sector becomes an extension of national and urban integration policies by digital means. Our research reveals important opportunities for improving the economic integration of migrants and refugees through digital upskilling. At the same time, it highlights the exclusive characteristics that are hidden within the powerful promise of digital skills as a universal fast lane to decent work. This offers important insights for national policymakers and digital skills initiatives around the world, who can learn from the successes and limitations of “digital integration” in Berlin in order to shape a more inclusive future of work for all.

Methods

Our findings are based on ethnographic fieldwork at coding schools in Berlin and interviews with their staff and beneficiaries, conducted by the authors during two research visits to Berlin in 2019 and 2020, alongside remote interviews. The majority of the fieldwork took place at ReDI School, which kindly gave us the opportunity to participate in activities, such as career counselling sessions, workshops, and classes. Alongside current and former students, we also interviewed teachers, volunteers, and experts in the field. Our joint qualitative analysis of the empirical material is based on 42 interviews, alongside informal conversations and observations during fieldwork. Additional insights were gained by collaborating with ReDI School in the design of an online survey among their graduates, with 101 respondents. This brief survey asked about respondents' nationality, legal status, their working status, and the main barriers they faced in finding jobs with the skills they learnt.

Instilling hopes: the allures of coding

On a Saturday morning at the Microsoft Atrium event space in Berlin, staff of the ReDI School were busy getting the venue ready for the new students of their Digital Career Programme. Soon the spacious venue came to life with a diversity of young people, mainly refugees and migrants in their 20s and early 30s. One of the older ones among them was Hisham³ from Syria. Before the war displaced him, he had worked as a lawyer in his home country – a highly prestigious profession. “Here I cannot work as a lawyer because they don’t accredit my degree”, he said during a chat before the event started, standing around the busy coffee tables in the lounge. He hoped that the Digital Career Programme would be his fast lane to a new and well-respected profession.

Many of the participants arrived with similar high hopes to the event, which was designed to create a community feeling for the new cohort while ensuring that they understood the “values and culture” of ReDI School. Alongside an overview of the programme, they got to know each other in ice-breaker activities and defined their shared visions in workshops. “What does on-boarding mean?” asked Manuel, the programme manager, from an elevated stage in front of a few dozen students. One man in the audience answered: “It’s like we board a new plane and go to places no one has ever seen before.” Manuel added: “Yes, it’s like making a journey, you are about to take a journey today, and today is your first day. So, you are on-boarded. Stay excited!” Benjamin, the director of the digital career service, later asked the participants: “Who is searching for employment here at the moment?” More than half of them put their hands up. “And who already has a job and is happy?” Only two raised their hands. They hoped that the programme could become their gateway to a new world of work.

The hopes of attendees at the event were not misplaced if numbers of vacant jobs in Germany’s tech industry are anything to go by: there were 124,000 vacancies for IT specialists in November 2019 (Bitkom 2019). This abundance of opportunity is often cited by coding schools as key to their purpose, part of what ReDI School described as “win-win-win”: “good for business”, “good for the student” and “good for the world”.⁴

³ We use pseudonyms for all coding school students and graduates.

⁴ See *ReDI Yearbook 2016-17*, p.10: <https://www.slideshare.net/ReDISchool/redi-school-yearbook-201617>, accessed 30.06.2020.

That employees in the international tech sector often speak English, rather than German, encapsulates its inclusive promise for newcomers. This is hugely appealing for the predominantly middle-class coding students who find themselves barred from skilled jobs because of their low level of German. The opportunity was captured well by Farid Bidarel, founder of the coding teaching initiative CodeDoor, who explained: “For a migrant from Syria who used to be a teacher, there is no way that you can be a teacher here unless your German is perfect. This is just the way it is here, the same with doctors. Software developers, you can; it’s an amazing potential.”

Moreover, coding promises to evade qualification requirements in other skilled sectors. For example, front-end software development is home to “a surprising number of those who taught themselves, and who arrived via a cultural side door” (Thompson 2019, 99). Not always requiring official qualifications means that coding appears particularly accessible as a career change. The Skilled Immigration Act, introduced in March 2020, reflects this exceptionalism by treating IT specialists differently from other professions: they do not require a degree and even German language skills are not absolutely necessary to obtain residency (Federal Foreign Office 2020).

Loving what you do: aspirational labour and the need for total commitment

A key part of the entrepreneurial framing of migrants and refugees as economically contributing and self-reliant is a demand for total commitment. Newcomers are often attracted by the promise that anyone can become a coder with hard work and enthusiasm. Wael from Syria came to Germany at the later stages of his degree in archaeology and found work after courses at the ReDI School. Asked whether he thought anyone could become a coder, he said: “Not really, if you don’t really like it [...] A lot of people should have the chance to get to know the field. Only the ones who love it should stay in this field.” This mirrors the ‘Do What You Love’ mantra of ‘aspirational labour’ in creative production for the digital economy, where powerful appeals to passion and entrepreneurialism reroute employment concerns towards a desired future goal where all investments will pay off and increase one’s status (Duffy 2015). The volunteers at digital skills schools often promoted such an approach.

In a JavaScript class for beginners at ReDI School, the teacher, Nadia, embodied such enthusiasm about the challenges of coding. After going through the first tasks of the course an error came up. She turned to the class, saying: “When the code turns red, I always get excited because I love debugging code!” This sense of passion was explicitly encouraged among students in classes and at career workshops. During a remote meeting hosted by ReDI School in April as part of its series, “A day in the life of...”, a software developer and volunteer mentor offered descriptions of his job and gave tips, while repeating how the enthusiasm and commitment of students at the school was their core appeal to employers. Implicitly, he told them, this enthusiasm is what they needed to cultivate in order to succeed:

Your weakness - your lack of experience - is also your strength. You come with fresh eyes, and a hunger. You come and want to find a job. Many of us get comfortable, we have a job and we get lazy. The industry needs people who are hungry.

By invoking a “hunger” that distinguished the students as newcomers to coding, this software developer suggested that they had an unusually strong will to learn and succeed. In addition, refugees and migrants were understood to be particularly suited for the rapid learning, adjustment and commitment needed to be successful in the IT sector because of their experience of migration and displacement. Hanan came to Germany in 2018 from Syria, hoping to find a job in the insurance industry where she had worked for some years in her hometown. She felt that her experience as a Syrian prepared her well for this. “Syrians are used to transformations”, she said. “If someone says this is very complicated and you will need two months to complete it, I will get it done in one month.” Although Hanan came to Germany on a student visa, she articulated how her Syrian-ness and experience of war and hardship make her particularly well suited to becoming a coder. In short: refugees are considered to be the ideal subjects for an entrepreneurial process of re-making in the digital economy.

Coding for integration: skilled migrants “in progress”

This re-making of refugees and migrants into skilled specialists for the tech sector represents a promising path to “integration”, in line with national policies and the needs of an international tech-driven city. The German government has promoted migrants and asylum-seekers to be entrepreneurial and self-sufficient, while sanctioning those who become a “public burden”: to prevent a lack of integration and long-term dependence on social benefits, and to make refugees and migrants contribute economically to meet skills shortages in certain sectors (Hinger 2020, 27). Digital skills training institutions become important mediators that help fill this shortage in the technology sector by upskilling newcomers. They turn potential “public burdens” into skilled migrants.

Their mediating role is especially important for migrants and refugees because Germany has a well-protected skilled labour market, defined by a dual education system that combines apprenticeships with vocational training. A survey by the Job Agency found that 68 percent of refugees already in Germany want to learn a new profession or enter higher education (Bundesagentur für Arbeit 2020). Amidst fears of immigrants devaluing German qualifications and professions, migrants and refugees have faced particular difficulties in accessing apprenticeships (OECD 2018, 28). The new Skilled Immigration Act now opens more professions to people with tertiary education and those who can prove professional training that is *equivalent* to a German degree, including those acquired in the dual education system (Zech 2020). However, many skilled applicants will likely fail this equivalence test. The law will also not help highly skilled asylum seekers and migrants currently in Germany, because those who would be eligible for a skilled worker’s visa but already live in Germany cannot apply (Grüll 2020).

Coding schools fill an important gap in the German immigration regime because they aim to turn migrants already in the country into skilled specialists. This aligns well with national strategies while also responding to the needs of the tech sector and the international tech-driven city of Berlin. Part of the city’s openness towards diversity and immigration is because its technology driven economy requires a steady inflow of international skilled workers. Berlin had the highest share of immigrants and migrants in the population among Germany’s regions

by 2020, some 22 percent, and 3 percent refugees. Although cities are dependent on national migration regimes, they often implicitly pursue immigration strategies in a proactive and open-minded manner to reduce the financial and social costs of their presence (Hinger 2020, 35; Kühn 2018). Berlin historically had high unemployment rates up to a peak of 19% in 2005, before it established itself as a tech-driven economy and a multicultural city (OECD 2018). The city recently announced it will boost efforts to attract skilled workers with a special new office for skilled migration (Knight 2019). The ReDI School and other similar initiatives have shown that there is significant skill potential among migrants and refugees already in the country, who take up the function of *skilled* migrants ‘in progress’ within the economy. Their efforts are significant if one considers that 210,000 refugees and asylum seekers were registered as unemployed with the Job agency in 2020 (Bundesagentur für Arbeit 2020).

Against this backdrop, coding schools bridge national and urban integration regimes with an international tech sector. The prospect of becoming skilled employees instils strong aspirations among refugees from middle-class backgrounds, because forced displacement often entails a loss of class status through the dissolution of careers and the non-recognition of qualifications (Jansen 2010). Learning to code therefore represents a fast lane to restoring a certain status and class identity, while such class identity is simultaneously undermined by ongoing experiences of discrimination. The search for status and recognition is captured in what Sarya, a JavaScript student at ReDI School from Turkey, identified as the reason why “newcomers” want to learn to code. When her cohort was asked what they wanted from learning to code at a ReDI event, “we all replied, ‘respect’”, she said. “This is because no one respects us. We feel like cockroaches here.” This indicates how access to decent work can serve to facilitate a broader and more encompassing notion of integration as “belonging” (Easton-Calabria and Wood 2020). The hope for gaining “respect” through work in the IT sector represents an opportunity to overcome an enduring sense of outsidersness and degradation.

Digital integration for newcomers: writing code, decoding “culture”

Coding schools teach the particular hard skills required by the sector, such as programming languages. But succeeding requires a more fundamental process of adaptation. “Soft skills” describe this need for socio-cultural adaptation, referring to specific competencies, such as communication skills, character traits, and a “culture fit”. While the IT sector promises to circumvent the strictures and obstacles of the German labour market, it imposes a new set of challenges and demands adaptation: integration in society through entering the labour market, and integration into the specific socio-cultural norms of the “cosmopolitan” tech scene. Digital “integration” therefore has a dual sense of the need for coding and decoding: coding is a hard skill that must be learnt, and the specific work culture of the sector must be decoded. These two requirements are paralleled by the need to master the legal regime and fulfil the conditions imposed by national integration policies.

Labour market access of refugees and other migrants in Germany is governed by the same legal instrument, a non-permanent German residence permit (Eule and Verkuyten 2016, 13). Every migrant, asylum seeker, or refugee with a residence permit and a lack of German language skills is required to attend an integration course, while some laws and policies, like

the 2016 Integration Bill, apply to asylum seekers and refugees specifically.⁵ Overall, the integration regime is designed to punish those who become a “public burden” while rewarding those who contribute: if a refugee welfare recipient fails to take part in the labour market or work scheme, social benefits can be cut and their settlement permit is withheld, while those who succeed in acquiring advanced German skills and secure their own livelihood are rewarded with the prospect of permanent ‘settlement’ after 3 years.

The dual need of learning to code and decoding the working culture of tech companies mirrors official demands for cultural integration and being a self-sufficient and economically contributing immigrant. Although the sector’s inclusiveness circumvents some of the barriers migrants and refugees face in entering the German labour market, it also mirrors some of its pressures: succeeding in tech becomes a continuation of integration policies by digital means.

Leaning to code: teaching hard skills for employment in tech

Just like the Skilled Immigration Act, coding schools are demand oriented. The Digital Career Programme at ReDI School focuses on skills that are needed, away from topics such as robotics towards key programming languages. As Manuel, head of the programme, explained, “If you look at Line.io (a popular job platform in Germany) there are 16 jobs for the whole of Berlin for robotics but 1000 for Java!” One of the primary roles of ReDI School is therefore to prepare newcomers’ skills so they match the technical demands of the market. At the same time, its short programmes with four hours of training a week can only be one stage on the journey to a career in the IT sector. Each year only around 10-20% of students on the intermediate programme go on to get an internship or job soon after they graduate, according to a rough estimate by Manuel.

A survey ReDI conducted in collaboration with the authors in July 2020 showed that refugees had lower full-time employment rates than migrants with other legal statuses, while more time passed since graduation among students meant higher chances of employment. Overall, 40 percent of 101 alumni respondents stated they were working full-time, 20 percent were not working, eight percent worked part-time, and five percent did an internship (others were freelancers, entrepreneurs, or students). This data included alumni who graduated from ReDI courses between 2016 and 2019. Among those 37 respondents who finished their last course in 2019, the share of those who didn’t work rose to 18 percent, while the share of those who worked full-time fell to 35 percent (another eight percent worked part time). Among the 51 respondents with refugee status, the share of those working full-time was only 29 percent while 25 percent were unemployed, although another 6 percent worked part-time and 8 percent did internships. A closer look at graduates’ jobs shows that while the majority of the employed worked in digital fields such as software engineering or network administration, some also worked in unrelated fields, as ‘social worker’, ‘shop assistant’, or ‘delivery driver’.

While ReDI School does not frame its short courses as an immediate ticket to a job, the Digital Career Institute (DCI) aims to provide the skills for students to find employment by the end of

⁵ The Integration Bill of 2016 governs which nationalities of asylum seekers are fast-tracked through the integration system and which are not, while providing access to training and work for refugees and asylum seekers. So-called refugee integration measures also included low-paid jobs as a “meaningful occupation” that should make asylum-seekers fit for the German labour market (Hinger 2020, 26–27).

its course. According to DCI, as many as 85% of students in some cohorts entered work four to five months after graduating. DCI was founded in 2016 as Devugees, and like ReDI School, it originally targeted refugees but soon opened up to other students. All its students are now funded by the Jobcenter or the Federal Agency for Work. DCI seeks to get students into jobs through a comprehensive focus on front-end web development. Franziska Ibele from the careers service called this the easier-to-learn side of its full-stack web development programme (meaning front-end and back-end). The courses take 16 months compared to the more common 3 to 6-month programmes.

ReDI School and DCI prepare newcomers by providing a site for the development of known skills that are in high demand in the tech sector. FrauenLoop, a coding school that aims to open up the tech sector to women who are “newcomers” in Berlin, focused on lesser-known skills in demand. Its founder, Nakeema Stefflbauer, explained that soon after introducing students to basics in programming they answered questions such as: “Where are the jobs?” and “What are the requirements?” Reflecting her aim of raising awareness about the diversity of possible careers, she said:

Most of the jobs which have the lowest barriers to entry are not known, and they’re not going to be known because they’re not featured in *Wired* magazine. So you don’t have a sense when coming from outside the industry of the ubiquitous “quality assurance tester”, you don’t know that job exists [...]

The variety of jobs available leads FrauenLoop to tell its students that the school is not aiming to “produce developers”, but rather to promote opportunities for tech-related decent work more broadly. The courses allow students a link to build on their previous work experience. When Nakeema introduces students to jobs such as data visualisation, they will often make a link to their previous careers: “they tell me: ‘Amazing, I’m into that! I’m a journalist, or a marketer, I’m someone who could really use this skill... and it makes sense to me.’” While coding schools’ primary aim is to mediate between newcomers and skill demands in the IT sector, they go well beyond such technical training and put strong emphasis on a range of “soft skills” as a means to integration.

Decoding work culture: soft skills and the need for socio-cultural adaptation

“You will notice from that picture there is not a computer in sight”, Anne Kjaer-Riechert, founder of ReDI School, told the audience at her TEDx talk in 2017,⁶ as she showed a picture of crowded tables at one of the first classes of ReDI School in 2016. She added:

[This is] because we believe that learning to code is not just about the ability to write beautiful code, it’s about developing a problem-solving mindset to come up with [...] solutions for society.

While studying programming and other technical skills promises access to hi-tech jobs in theory, fulfilling this promise in practice demands “soft skills”: an opaque term that can be

⁶ “Hacking the Refugee Crisis.” Tedx Talks, YouTube. 06.05.2016: <https://www.youtube.com/watch?v=wz0mlDELSo0>.

stretched to cover a range of skills, attributes and traits, such as a “problem solving mindset”. In digital skills training for refugees, soft skills further encompass “interpersonal ‘people’ skills as well as character traits” (Easton-Calabria 2019, 20). Asked to improve their soft skills, migrants and refugees must change themselves before they can change their career: to succeed as coders they must first decode the working culture of the sector. The implicit message is that success requires them to hide certain aspects of who they are while making other traits more visible.

Soft skills were often described in relation to “culture”, but it can be difficult to put a finger on what that culture consists of. An international start-up scene shares space with local IT companies in Berlin where most staff may be German and where business is relatively local. At the same time, local companies may still employ a diverse workforce and operate services in English. Looming large on the scene for coding schools such as ReDI School were Berlin-based mature start-ups, including companies such as Durst Express (deliveries), Zalando (e-commerce) and Babbel (language learning). These companies were a major reference point, their job opportunities widely shared, their company culture and work practices discussed at career gatherings, and their employees active participants as guest speakers and teachers.

Aimee Nortje, head of a novice training programme at Babbel, saw soft skills as a form of “culture fit” in an international tech scene. This “culture” was unlike the need to fit into a specific German work culture because of a diversity of backgrounds among staff and the company’s global reach: “Babbel is a very cool place to work. We have over 58 nationalities”, she explained. Aimee further defined “culture fit” to include a strong sense of initiative and developing “a learning culture”, which she related specifically to Babbel’s mission of driving language learning. Coding schools mirrored this need for a learning culture, “to teach how to learn coding, rather than provide the actual resources themselves”, according to Farid Bidarel, the founder of CodeDoor.

Moreover, “soft skills” referred to an ability to “fit in” and perform expected behavioural norms, which puts assimilative pressures on the diverse backgrounds of migrants and refugees. This becomes clear in a story told to us by Bassem, a Sudanese master’s student studying at ReDI School, about a Pakistani friend who was one of two people left for a job at a major multinational IT company. After getting through what Bassem described as “twenty interviews”, and despite having all the same skills and qualifications, his friend did not get the job. According to him, the company justified this by saying that he did not look “friendly” enough. Clearly then the demand for “soft skills” can become a euphemism for not being “friendly” or culturally familiar enough; or, in some instances, not being male enough.

Tech culture is often described as being oriented around “a young white man who’s single” (Thompson 2019, 209). Berlin’s Meetup scene, which normally consists of “pizza and beer” evenings held in the open-plan offices or foyers of companies, exemplifies this culture. These spaces are inclusive because anyone who signs up can attend, but their standard format also presents a number of informal barriers. Nakeema Stefflbauer, head of FrauenLoop, considered Meetups to be exclusionary to a range of people, including, for example, some Middle Eastern women. In her opinion, there is a risk with Meetups: “it’s not welcoming, it’s not safe necessarily, it’s not accommodating to different lifestyles [...]” These exclusionary

dimensions may explain why only 22% of participants of tech-related Meetup events in Europe in 2018 were women.⁷

The problem with Meetups indicates an exclusionary culture of start-ups, where their progressive reputation obscures a set of characteristics new entrants must adapt to. This shares similarities with the “cosmopolitanism” of the financial sector, which “demands conformity to a particular style of self-presentation and to a quite limited range of characteristics” (Ye and Kelly 2011, 704). On all accounts, the start-up scene remains “super white, super male, super young, and not looking anything like the streets you take to walk to them”, said Nakeema. A 2018 report on London’s tech scene found that only 8.5% of senior executives in technology companies are from a minority background (Inclusive Tech Alliance 2018). While the tech scene offers opportunities to circumvent some of the strictures of the German labour market, it demands complicated processes of change and adaptation from migrants and refugees. To what extent, then, does the IT sector’s promise of a fast lane to decent work reflect the experiences of “newcomers”?

A fast lane full of obstacles: getting into tech as a “newcomer”

The head of the digital career service at ReDI School, Benjamin, went through the job advert for a data analyst at a regular career counselling session. He seemed to have doubts as to whether Paul was a suitable candidate. The list included requirements such as “four years work experience as a data scientist” and “experience of working in a cloud environment”. As a rule, Benjamin explained in the glass-panelled meeting room on one side of ReDI School’s office, you should aim to have 60% of the requirements for the position, asking: “Do you think you have enough to apply?” Paul, a Nigerian in his early thirties reflected for a moment. He had recently completed intermediate level in Python programming at ReDI School. He had also spent a number of years analysing financial data in Nigeria, where he worked for a bank. He expressed some concern about the experience requirement but otherwise he was confident he could apply.

Paul’s interest in programming had been prompted by being unable to find work at banks in Germany, as he explained in an interview after the career counselling session. In the previous few weeks he had finished his master’s degree in economics and had worked on his LinkedIn profile and his CV. He said he was impressed by the number of opportunities coming up on job sites. His hopes were raised by the experience of a Nigerian friend, Leo, who had managed to get on to a trainee programme to become a full-stack developer after studying at ReDI School. “Now I can believe much more that I’m in the right place and I have hope.” Three months later, Paul found a job as a data analyst for a media company outside of Berlin.

There were plenty of examples of “newcomers” making it in the sector among volunteer teachers at ReDI School and in the wider community. This was apparent in posts shared on the School’s Slack channel. New posts would be accompanied by accounts of the previous success of ReDI School students at the firm. The following, written under a link for a job at

⁷ Data from *The State of European Tech 2018*: <https://2018.stateofeuropeantech.com/chapter/diversity-inclusion/article/weve-got-problem/>, accessed 10.05.2020.

Colorfy (a colouring book app for adults), was typical: “They have recently hired one of our students and are very happy with his motivation and commitment [raised arm *emoji*] and are willing to interview more of you!”

Many students had the expectation that learning to code could offer what it appeared to promise: access to decent work in ways that diverged considerably from other sectors. Few, however, considered finding a junior role or traineeship as a developer to be easy. Leo and Paul’s success as relative novices was not unheard of, but neither was it common. As Manuel at ReDI School explained, for every instance like this there are people who can spend 2-3 years searching for a job without success: “It is not only what you know, but who you are, and luck, and self-esteem”. For the majority of people, coding as a fast lane to decent work was an uncertain, stilted, and bumpy journey.

“It gets very muddy”: when optimism meets reality

Something was not right among the approximately thirty students who attended the “Start Your Tech Career” workshop at ReDI School led by Fabienne, an HR specialist serving the IT sector in Berlin. The workshop was an upbeat introduction to the sector with the presentation outlining the many jobs available and explaining why Berlin is the best place to access them. Yet, there was apparent tension between the optimism of the charismatic presenter and the lived experience of students. Mid-way through the presentation one or two students quietly gathered their things and shuffled out of the cavernous main office at ReDI School. Well into the Q&A and with half the attendees no longer present, the problem was framed eloquently by one student, a migrant from Africa in his early thirties. Gesturing to what he understood as the subtext of the doubts being shared, he explained: “It gets very muddy. All I see [in job adverts] is CSS, JavaScript, UX design; it’s pretty high. Even traineeships, there is a long list. You look at the list and you just have one line [of the criteria you meet].” There was general assent from the rest of the class. Indeed, some 30 percent of surveyed ReDI alumni agreed that one of the main barriers they faced in finding a good job with the skills they learnt was that, “the jobs I want require too many skills I don't have”.

Alongside these high demands by employers the students expressed concern about discrimination. As a black woman in the class asked Fabienne: “is it really necessary to include a picture on a CV and risk being discriminated against?” It was a question that echoed the concerns of many job seekers. Tahir, another ReDI School student from Syria, experienced that being a foreigner determined the challenges he faced in applying for jobs: “Most people don’t want to employ you unless you’ve worked here before; maybe because of the language, or they had a bad experience with foreigners.” Indeed, some 36 percent of ReDI alumni we surveyed found that the “need to have gained work experience in Germany” posed a major barrier. The frequent demand for local work experience for Tahir was an expression of the *risk* employers associated with employing “foreigners”. Requirements for “national” job experience are widespread in Germany and beyond, as for example in Canada, where demands for “Canadian experience” in skilled job adverts serve as a means of differentiating between natives and immigrants (Bauder 2003).

Aarif, a volunteer teacher at ReDI School, had considerable first-hand experience of being on the wrong side of this risk estimation. Aarif came to Germany from Syria on a student visa to

do his master's degree in computer science. Over the year after finishing his course he was rejected from 348 online applications. For Aarif, this was closely connected to having a non-German name, and he feared that most of the time his applications were not even read. Sometimes he received rejection letters addressed to "Frau" (Mrs), despite having his photograph on the CV. He reasoned that a lot of the places he applied to must get thousands of applications for the jobs they post so when they see he is a "foreigner", they don't consider him: "that's one less application". Aarif's perception of discrimination is reflected in statistics for the European tech ecosystem more broadly, where close to a third of workers in 2018 reported discrimination based on ethnicity.⁸

Hopes of a fast lane to decent jobs in the IT sector often did not materialise as "newcomers" confronted the high demands of employers and discrimination. Progress was full of false starts: finding a job as a programmer, for example, could take years, if it materialised at all. Part of these long journeys were often precarious working conditions in low-paid jobs that the students saw as a chance to gain a foot in the door of tech companies. One common example was part-time, minimum wage work as content moderators through third-party providers for social media companies such as Facebook.

Working for long hours to survive economically and avoid becoming a welfare "burden" made it difficult to invest the passion and total commitment needed for success. Salim, a Syrian man from Latakkiya who was in his early thirties and had studied law before coming to Germany in 2015, took on a "part-time" job at Amazon, thinking this would get him the money and leave him with half his time to learn to code at ReDI School. However, the job entailed several hours of unpaid overtime on a regular basis and weeks into work, Salim found that it created new challenges. When he could attend coding classes, he was tired and unfocused. Far from a smooth and rapid transition to a new world of work, Salim's aspirations to become a coder led him to confront the familiar slog of low-paid and undervalued work among migrants and refugees.

Precarious labour was a reality for many who found jobs in the IT sector. Internships could offer opportunities for early-stage coders to access longer-term, paid opportunities. Yet, a number of graduates felt they were being "used" by the companies. This was the case for Wael from Syria. A year after beginning to learn to code at ReDI School he got an internship with a digital advertising firm. This opportunity, however, resulted in seven months unpaid work, despite Wael being an integral part of the website development team. "It's hard to be in a place where you are not getting paid at all", he complained. When he did eventually negotiate his pay, it was lower than average but, he said, "It was my only option." His low pay has recently been thrown into sharper relief after getting married: "what I'm making is not enough, it was never enough, but I accepted it because I was building a career." This underlines how migrants and refugees are especially vulnerable to the negative effects of internships and underpaid roles, as forms of "aspirational labour" that become unsustainable if the aspired gains never materialise (Duffy 2015). The exploitation of such aspirational labour, and the appeal of its underlying promises, is a direct result of the specific vulnerabilities that define migrants and refugees' precarious legal and economic position.

⁸ Data from *State of European Tech 2018*: <https://2018.stateofeuropeantech.com/chapter/diversity-inclusion/article/were-all-part-problem/>, accessed 10.05.2020.

“Back to a warzone at the time of a pandemic”

These uncertainties even haunted the success stories of coding schools, such as Aarif, whose experience led him to conclude that Germany’s attitude towards newcomers was that “you are here to do certain kinds of jobs”. Following his 348 applications to jobs online, Aarif moved to Berlin where he found an internship with a company after meeting someone at a job fair. It was a chequered experience and one colleague called him racist names, although most people at the company were friendly enough. Aarif described working 60-70-hour weeks while being paid 8-9 euros an hour, hoping to prove himself and turn the internship into a full-time contract. Yet despite his efforts, it did not lead to anything and in the end he was laid off.

After the internship, Aarif struggled to support himself but actively resisted help from the Jobcenter because he did not want to become a “welfare burden”. For this reason, he also refused to apply for asylum and became a warehouse worker. Around this time his fortune changed. Through volunteering at ReDI School he gained access to a well-placed network. One of his colleagues introduced him to a job at Cisco, a multinational technology company, and through this contact he was able to overcome the obstacles in his previous application: “It wasn’t special treatment, but it did mean I didn’t get an automatic red line from an online bot”, he explained, referring to the use of algorithms to select candidates for job posts. In this “algorithmic game”, international applicants are far less likely than German applicants to succeed (Liu-Farrer and Shire 2020, 6).

He was successful at Cisco but turned the job down when he got a place on a traineeship programme at Microsoft, where he overcame tough competition over the course of several interviews. “If we had spoken a month ago, I would have given you a very different picture”, he explained. Since then, however, everything had been thrown into uncertainty. In late March 2020, he received a letter from the *Ausländerbehörde* (Foreigners’ Office) explaining that he must leave the country because of overstaying his student visa. His current “training contract” with Microsoft did not earn above the threshold for remaining, and the decision did not consider his place on the graduate scheme with Microsoft starting in September.

This was not a simple “technical issue” for Aarif, as his lawyer assured him, saying that it would be cleared up when he started his well-paid role in September. It spoke of his enduring outsidership and the inescapable uncertainty of his status in Germany. The letter destroyed the hopes and aspirations he had that his dedication to learning and hard work would translate into an official recognition of his efforts to succeed and “integrate”. He explained: “I’m not a refugee, I’m not asking for help”, invoking a sense of self-sufficiency and autonomy that defines “good” immigrants as deserving and contributing (Vandevoordt and Verschragen 2019). Aarif perceived the letter as an expression of total disregard for his well-being, “as someone they are sending back to a warzone at the time of a pandemic.” Aarif’s story exemplifies the limits of the IT sector to circumvent the challenges and uncertainties associated with being migrant or refugee “newcomers” that can fall through the cracks of Germany’s immigration regime. Even making it as a coder for a major multinational IT company does not necessarily protect you from the uncertainty of a non-permanent legal status that remains conditional on the fulfilment of a range of criteria.

Conclusion

Berlin's coding schools play a crucial role in the upskilling of refugees and migrants in an increasingly digitised world of work. By training "newcomers" in digital skills that are in high demand, the schools produce skilled migrants "in progress" who come to see coding as a fast lane to decent work and labour market integration. Their hopes are fuelled by the powerful universal promise that anyone can succeed as a coder, that IT specialists are needed, and that the international tech sector allows them to circumvent the barriers that slow their access to the German labour market. For some, this promise holds true, at least eventually: 40 percent of surveyed alumni at the ReDI School from courses that finished between 2016 and 2019 were employed full-time by summer 2020, in mostly digital fields of work. Yet, focusing on those who succeed would obscure the difficult struggles that lead there, or for some, nowhere.

As coding students begin to apply for jobs and evaluate their career options, they often realise that the fast lane they have entered is not so fast after all, and that it is fraught with obstacles. The ostensibly inclusive, non-discriminatory, and diverse tech sector emerges as highly competitive and comes with its own demands for passionate, totally committed and "culturally fitting" candidates. The road to decent employment is scattered with unpaid or underpaid internships and short-term work. Migrants and refugees come to invest in such "aspirational labour" in the hope that it will pay off in the future by bringing them decent work, respect, and middle-class status (Duffy 2015). Migrants and refugees are particularly susceptible to these powerful hopes because they are often subject to de-skilling and experience discrimination, while often being unable to accredit pre-existing qualifications. Especially for middle class refugees who have not only lost a homeland but also a professional identity and class status, the accelerated social mobility that coding promises symbolises a way out of being a "refugee" to becoming a skilled "good" immigrant. But their pathways of "digital integration" are tainted by a deeply rooted contradiction between middle class aspirations that are said to be universal, because *anyone* can in theory succeed as a coder with hard work and passion, and recurring experiences of discrimination, precarity, and racialisation.

Coding schools fulfil several key functions for the German integration regime and an urban tech-driven economy. Their efforts mirror government strategies that call for entrepreneurial and self-sufficient skilled migrants that contribute economically. In utilising the tech sector's inclusive potential for non-German speakers and for specialists without degrees, coding schools seek to circumvent barriers of the German integration regime while simultaneously fulfilling some of its aims: driving economic integration by teaching skills that are needed in the labour market, and driving socio-cultural integration by showing graduates how to fit into the sector "culturally". Not only must migrants and refugees prove their integrative efforts in official German integration courses, but they must also decode the specific characteristics and working culture of the international technology sector of Berlin. It follows that such "integration" becomes both national and international, requires speaking German and English, and demands extraordinary dedication and a willingness to work hard.

Aiming to contribute to a more inclusive future of digitised work, our research provides one important corrective of the flawed promise of digital careers as a *universal* fast lane to decent work, grounded in a detailed evaluation of the particular challenges that migrants and refugees face upon entering this “lane”. Migrants and refugees’ experiences reveal that the sector does not simply transcend the barriers and inequalities that define their marginal position within a national labour market. We hope that this critical perspective can inform future decisions among policy makers and digital skills initiatives. A report by the German labour ministry asks hopefully: “Will digitalisation enable everyone, as far as possible, to have a job in future?” (BMAS 2017, 8). Answering this question positively for *everyone* requires leaving no one behind, by upskilling migrants and refugees and supporting them better so they can fill shortages in the labour market. The work of the ReDI School and similar initiatives underline the potential digital upskilling provides for the labour market integration of refugees and migrants. In order to realise this potential, more attention must be paid to the barriers that limit their access to decent work in the technology sector. Our findings suggest that there is a need to raise awareness about discriminatory and exclusionary practices within the tech sector, while addressing exploitative working conditions in un- or underpaid internships and short-term contracts. Governments tasked with preparing their workforce for a digitised world of work can do more to complement such reskilling of citizens with an ongoing process of digitally upskilling migrants and refugees in the country.

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