

U.Va. Craigslist: Peer-to-Peer marketplace

(Technical Paper)

Future of Diversity in Tech and how AI-assisted recruiting will play a major role

(STS Paper)

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Introduction

Artificial Intelligence (AI) is currently shaping many business operations, human tasks and has made significant progress in technologies such as Speech recognition, Virtual Agents and decision management. Even though these technologies can be of great benefit to society we must analyze their consequences. One of these technologies is Tesla's autopilot which reduces human labor allowing for tasks such as self-park, self-steer, adjust speed and detect objects. Still, no technology is perfect and as stated by Tesla's vehicle safety report there is about one accident for every 2.87 million miles driven where autopilot is engaged (Tesla, 2018), including fatal incidents. AI has begun the quest to dominate the market and as such society must study how these technologies could be of concern. As a society, we must study these technologies' benefits and consequences and we must evaluate the role AI technologies will have on society and adjust to ethical responsibilities. Now that we understand the impact AI can have on society, I can introduce an AI tool that is set to dominate the market. This tool is called AI-assisted recruiting. The idea of this technology is to make hiring decisions based on some input data and the bias set by developers. Currently companies such as Amazon, PepsiCo and Cisco are beginning to use AI to help recruiters identify potential candidates. Such as Tesla's autopilot it is predicted this technology could have serious consequences. One of the biggest questions this technology raises is whether AI-assisted recruiting will put minority groups at a disadvantage. As 55% of Hiring Managers expect AI to be a regular part of their work within the next five years (Team, 2018) and Latinos and black represent each about 7% of the tech population we must greatly consider an implementation of ethical guidelines which can ensure the gap between minority and dominant groups is not increased further. "If AI is to become an essential and, most importantly,

ethical recruitment tool, we must first recognize its limitations in making sound judgments without oversight” (Low, 2019) Given the potential threat these AI technologies could pose it is important for all companies to set guidelines to their technologies.

As we observe how these technologies are ethically built, we must focus our attention at one of the most common ethical problems many technologies face. This problem is a lack of trust. Trust is currently a major issue for Peer to Peer markets, some companies with this business strategy are Uber, Lyft and Craigslist. However, at the University of Virginia this market has not been successful. Currently, there is no online resource for students to buy and sell items online. Many students will simply not trust resources like Craigslist because they have a reputation for being untrustworthy due to past incidents. As mentioned in a recent article from Stanford “Peer to Peer marketplace requires maintaining an adequate amount of trust by developing mechanisms to guard against low quality, misbehavior, and outright fraud” (Liran Einav, 2016) We want to provide U.Va. members a safe and trustworthy way to sell items they no longer want to other students or U.Va. faculty.

U.Va. Craigslist: Peer-to-Peer marketplace

A Peer-to-peer marketplace is a business model where buyers and sellers can exchange products or services. One of the major benefits to this business model is it allows buyers and sellers to exchange their roles. P2P allows lower cost for products and services while enabling fast transaction times. (“The Building Blocks of Online P2P Marketplaces”, 2019) Even though this business model can provide many advantages to both the customers and the business there is one major problem this business model faces. One of the most challenging problems facing the

market now is the fraudulent activities from players in the market (P2P Lending: A rising market with growth opportunities outweighing existing challenges, 2019) As these activities occur more and more often, customers lose their trust and use these online business with less frequency.

“One should expect trust to be increasingly in demand as a means of enduring the complexity of the future which technology will generate” (Luhmann, 1979) Given that human interactions and connections is at the center of our product we must realize that trust should be the main concern for all businesses building a Peer-to-Peer marketplace. Not only is trust essential for a Peer-to-Peer marketplace but trust is becoming essential for almost all technologies. As Microsoft CEO Satya Nadella suggests “Trust is the new currency” (DIAS, 2016) We propose to create a “U.Va. Craigslist” where students can sell old items to other students inside a secure and trustworthy online service. This service would ensure only U.Va. students and faculty can access this service by using NetBadge which is essentially a gatekeeper used to verify user identity between users and websites, services or applications at the University of Virginia. Using this security measure, we help reduce the risk of getting scammed by limiting the interaction between users to only allow interactions with other students or Faculty. By using NetBadge we would be able to hold students or Faculty accountable and provide a trustworthy site to exchange products or services. This technology will be made for the University Community and as such we can hold each other accountable. We trust that all users will hold themselves to high standards as they do in school and we believe the honor tradition will benefit the trustworthiness of our technology “the honor system has asked students at the University to hold themselves to a higher standard, by refraining from certain prohibited conduct, but also by actively demonstrating integrity and morality in all their dealings with others” (Christopher, 2017) Using this strategy users’ trust towards others in should increase and users should feel more free to interact with others inside the community. The

most successful P2P markets are all built on success and our goal is to successfully connect strangers and build a trusting community. This system is highly dependent on us trusting complete strangers: we get into their cars, sleep in their beds, invite them into our homes to assemble IKEA furniture, and message them to watch our pets (CROCKETT, 2018)

Future of Diversity in Tech and how AI-assisted recruiting will play a major role

According to the U.S. Equal Employment Opportunity Commission, In High technology industries, Hispanic people represent 7.97% of the population, while black people represent 7.4%, women represent 35.68% and white people 68.53% (Commission). Why are these groups so underrepresented in Tech? How will AI recruiting affect minority groups? do companies not profit from diversity? There are many underrepresented individuals who could have an impact creating technology who are not given the opportunity as Lisa Wining states, “There are so many new ideas and developments living in the brains of people who have not been given a chance to act on them, so why let technology be created by limited points of view? (Winning, 2018). Not only is it fair to give the same chance to every individual to work on such prestige companies but technologies built by these companies impact us every day and we must make sure they are built for everyone. As mentioned in a Forbes article “The best way to make sure these technologies are built for all of us is to make sure developers have a broad mindset and can bring different input from diverse social groups. In order to build a product that serves everyone, you need voices and input from all types of people” (Council, 2018). Minority groups and organizations are mutually benefited by improving diversity. Now that we know the importance of diversity in technology, we can wonder how current hiring processes affect the population of minority

groups. If we look into how the AI hiring algorithms work, we must consider that many companies try to recruit potential candidates based on current employees. Currently, minority population numbers are far from an ideal diverse population and therefore algorithms that learn from employee data could show bias towards the majority population. A report from Reuters can help us identify how these algorithms can show bias towards certain populations. This article was released in 2018 and suggests Amazon's AI recruiting tool shows bias against women. The article states the following "Amazon's idea is to have a system that would facilitate the work recruiters are doing and to take in some number of resumes and "spit out" the top candidates. Amazon's system taught itself that male candidates were preferable. It penalized resumes that included the word "women's," as in "women's chess club captain." (Dastin, 2018) This algorithm results in candidates similar to current employees while showing bias against underrepresented groups. Rather than changing how we currently recruit individuals we build a certain momentum where the technology is affected by recruiting bias and then this technology is used to determine recruiting results and social groups. An article by Julius Schulte who analyzes this event suggests "Instead of looking for the top candidates by skillset, this system taught itself to select candidates in the same way recruiters would. we observe bias not only because of human error, but also because the algorithms increasingly used by recruiters are not neutral; rather, they reproduce the same human errors they are supposed to eliminate." (Schulte, 2019). This quote suggests the reasoning behind the algorithm's bias is not due to the algorithm or the technology itself but rather by the developers and the bias shown by those who created it. This technology will generate a recurring relationship where the bias given to the algorithm will determine the resulting hiring bias which will inevitably be used as the new input. It is important society understands AI-assisted recruiting algorithms can determine the role minority groups will

have in the future and we must make sure all cultural groups are taken into account. Not only to help diverse groups but to aid companies achieve their greatest potential by having groups with wider perspectives to create technology built for everyone.

Research Question and Methods

Due to the relationship between the technology and society I will be using the STS framework technological momentum and state my research question to be “How we can ensure these tools are built ethically and without disadvantaging minority groups”. My methods to answer this question will rely on first studying cases where technologies have shown bias against diverse groups in order to fully understand this problem and second, studying how having a diverse group creating these technologies can benefit the algorithm’s bias. It is important to recognize the benefit diverse developers will bring to the table as suggested in a recent Entrepreneur article “When you have a bunch of people with similar identities and backgrounds, they’re going to think and see the world in similar ways. In contrast, diverse groups yield a wider range of experiences and perspectives” (Eaton-Cardone, 2018) For this second method I will look into cases where diverse groups are more able to build technology fit for different culture groups and how a group with small mindset can affect the resulting technology.

Conclusion

As AI-assisted recruiting scales, it is critical for organizations and the technology they are creating to be committed to diversity. As in a cycle, developers will determine the technology’s

input bias and technology will determine its continuity. As such, it is critical that these technologies are built by a diverse team and that the developers are not limited to a particular social group. The impact AI-assisted recruiting is going to make on organizations all over the world depends on its creators and as such the future of many people's lives will depend on developer bias. I hope to find that creator bias and perspective are key to an ethically AI-assisted recruiting technology.

As trust is one of the major factors when building technology, our team expects to build an online service where users can connect with strangers at a new level. Not only do we expect this to allow users to share their information without security concerns but to allow users to feel comfortable as they dive in this technology and become part of a new community never seen before at this school.

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