

Undergraduate Thesis Prospectus

**Algorithmic Bias: How Artificial Intelligence Discriminates**

(technical research project in Computer Science)

**Civic Life Sentence: How Critics of Felony Disenfranchisement Pursue Reform**

(sociotechnical research project)

by

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On my honor as a University student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

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## **General research problem**

*How can institutionalized discrimination in the United States be reduced?*

Institutionalized discrimination is defined as “adverse treatment of members of minority groups due to the explicit and implicit rules that regulate behavior including rules set and enforced by firms, schools, government, markets, and society” (Aviram, Bragg, & Lewis, 2017). In the United States as in other countries, institutionalized discrimination by class, gender, and race shapes the datasets that inform and guide applications, thereby encoding discriminatory biases (West & Allen, 2020). In the U.S. criminal justice system, such discrimination is exacerbated and perpetuated through felony disenfranchisement laws (Uggen, Larson, & Shannon, 2016).

## **Algorithmic Bias: How Artificial Intelligence Discriminates**

*How does artificial intelligence discriminate against disadvantaged groups in the United States?*

This technical project will summarize and analyze articles in the area of algorithmic bias. The technical advisor is Professor Aaron Bloomfield of the Computer Science department. This is an independent capstone project.

Artificial intelligence refers to machines that are able to make decisions with “intentionality, intelligence, and adaptability” (West & Allen, 2020). These decisions are typically made through the use of neural networks and deep-learning algorithms, which derive outcomes by assessing patterns in pre-existing data (West & Allen, 2020). However, ethical questions arise when the resulting decisions show evidence of algorithmic bias. The basis for algorithmic bias is a deviation of the derived solution from

a standard. Bias may stem from various standards, such as a statistical standard or an accepted moral standard. Algorithmic bias may emanate from several stages within the development process, ranging from incorrect training data to user misinterpretation of data (UNIDIR, 2018). For example, Amazon's vetting software that penalized applications with the word "women's" displays algorithmic bias from a moral standard by exacerbating existing societal biases against women (Turner-Lee, Resnick, & Barton, 2019). Due to training data or algorithm content being considered proprietary information, bias may become black-boxed and difficult to detect (UNIDIR, 2018).

The goal of this project is to summarize the sources and implications of algorithmic bias. Using existing literature, this research paper will analyze artificial intelligence algorithms that discriminate against disadvantaged groups and the bias that causes said discrimination. Research surrounding the ethics of artificial intelligence arose due to growing concern surrounding the future applications of artificial intelligence (Anderson, & Rainie, 2018). Due to innovation in supporting technologies such as cloud computing, artificial intelligence has become more efficient and economical (El Khatib, Al-Nakeeb, & Ahmed, 2019). In summarizing and analyzing the existing diagnostic literature, this project will aid future prescriptive research into solutions for algorithmic bias.

### **Civic Life Sentence: How Critics of Felony Disenfranchisement Pursue Reform**

*How do critics of felony disenfranchisement in the United States pursue the reforms they favor?*

Felony disenfranchisement emerged as voting rights were extended to African Americans during the 1860s and 1870s. The 14th amendment to the U.S. constitution deterred denial of suffrage in elections for federal office, “except for participation in rebellion, or other crime.” This clause was legal grounds for state legislated felony disenfranchisement. In 2016 about 6.1 million citizens (2.5 percent of the voting-age population) were disenfranchised due to a conviction. The number is greater than the margin of victory in some recent presidential elections (Uggen, Larson, & Shannon, 2016). More than half of those disenfranchised in 2016 had completed their sentence, including any probation or parole periods, and the majority were convicted for nonviolent crimes (Uggen, Larson, & Shannon, 2016). African Americans are far more likely to be legally disenfranchised than other Americans. More than 7 percent of African Americans of voting age are disenfranchised due to a conviction (Uggen, Larson, & Shannon, 2016). The United States has the world’s highest incarceration rate. The Supreme Court has repeatedly upheld felony disenfranchisement (Walmsley, 2016). Critics of criminal disenfranchisement are striving to put an end to the practice.

Researchers have examined efforts to end felony disenfranchisement; for instance, McMiller (2008) found that reformers work with legislators, community members, and civil rights organizations. Since the U.S. Supreme Court overturned provisions of the Voting Rights Act of 1965 in *Shelby County v. Holder* (2013), reformers have turned their attention to state government (Baldwin, 2014). Yet reformers still question the constitutionality of disenfranchisement, in part by framing it as a means of “taxation without representation” (McMiller, 2008). Aviram, Bragg, and Lewis (2017) found that

reform can succeed if “political and financial conditions support bipartisan collaboration.”

Researchers have also investigated the effects of and the motives for felony disenfranchisement. King and Erickson (2016) found that communities with higher rates of felony convictions “become less influential” than more affluent neighborhoods. Behrens, Uggen, and Manza (2003) demonstrated that states with prison populations with a relatively high share of nonwhite prisoners are more likely to adopt felony disenfranchisement. According to Bennett (2016), retribution has been the most successful legal defense of penal disenfranchisement. Bennett condemns disenfranchisement except for conviction of voter fraud. Edkins and Redlich (2019) note that even after felons have completed their sentences, they often face not only disenfranchisement, but also impaired access to employment, government assistance, or licensing. The researchers add that formal barriers and social exclusion can be debilitating; disenfranchised persons may feel dehumanized. Subjects of social exclusion may in turn dehumanize its perpetrators (Bastian & Haslam, 2011).

Participants include the ACLU (2010), a nonprofit civil rights advocacy; the Brennan Center for Justice, a law and policy institute that regards felony disenfranchisement as antidemocratic (Brennan Center, 2020); and the Sentencing Project, an advocacy that fights felony disenfranchisement (Hill, 2020). These organizations form coalitions to advance their common agenda. For example, an ACLU staff attorney serves on the board of the Sentencing Project (Hill, 2020). Reformers have achieved some successes. In 2018, Florida’s Voting Rights Restoration for Felons Initiative automatically restored voting rights to felons who had completed their

sentences, including parole and probation (FRRC, 2020). To qualify, felons must pay any legal fines or fees resulting from their conviction. Florida Rights Restoration Coalition, an advocacy, raised more than 7 million dollars to cover these expenses for felons in need (FRRC, 2020). Such mandatory fees are “sanctioned under the laws of forty-eight states and the District of Columbia” (Colgan, 2019).

Defenders of criminal disenfranchisement have included New York City Corporation Counsel J. Lee Rankin, who contended in 1967 that it is not “unreasonable” to disenfranchise “perpetrators of serious crimes” (Green v. Board, 1967). In 1974 the Supreme Court, in *Richardson v. Ramirez* (1974), ruled 6-3 that state-sanctioned felony disenfranchisement can be constitutional. The Heritage Foundation, a conservative public policy think tank, endorsed an opinion piece that contends that felons “should not have a role in making the law for everyone else” (Clegg & Spakovsky, 2018). The authors argue that felons, like children and the mentally incompetent, do not meet “objective standards of responsibility,” and are therefore not entitled to vote (Clegg & Spakovsky, 2018). To curb recidivism, Heritage deems a waiting period for restoration of voting rights a “perfectly reasonable requirement” (Spakovsky, 2013). The conservative interest group Eagle Forum argues that elections must not be opportunities “for criminals to elect fellow criminals”; voting is the civic responsibility of “law-abiding citizens” (Schlafly, 2004). It opposes the use of executive orders to restore voting rights, arguing (like some critics of disenfranchisement) that enfranchised felons could “swing the outcome” of an election. In 2016, when Virginia’s governor, Democrat Terry McAuliffe, tried to enfranchise 206,000 felons by executive order, the interest group’s president, Phyllis Schlafly, argued that he might thereby win the state for Hillary Clinton in the presidential election that

November (Schlafly, 2016). Schlafly died before the election, but in the event the Virginia Supreme Court found McAuliffe's order unconstitutional, and Clinton carried the state without the votes of any of the felons that the governor had tried to enfranchise.

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