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Research Summary
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Facebook is the largest steward of social identity in the world. It has a responsibility to maintain respectful, ethical, equitable representations of the nearly three billion individuals who use their platforms. Facebook has already done a great job of this—for example, by embracing progressive notions of gender in its profile settings.

However, as computer systems are increasingly trained to recognize and respond to human characteristics, new challenges arise in how identity characteristics are represented. We already know there are often problems with how human identity is represented in data. Human traits are embedded into algorithmic computer systems in new and unique ways: without "user" input. Control over how one's data representation is created and used is increasingly difficult. This difficulty stems from the technical limitations of challenging "black box" algorithms and the theoretical limitations of entrusting algorithms to make objective, "data-driven" decisions.

To investigate representations of human identity in ML, I focus on two types of identity that have experienced a history of marginalization and thus necessitate intervention: gender and race. I will examine gender and race through the lens of a particularly evocative domain in regards to identity representations: *computer vision (CV)*, in particular *facial analysis (FA),* like *facial recognition*.

Already, concern about FA stems from the use cases of CV-driven technologies, such as potentials for policing, social control, and surveillance by both state and corporate interests. People with minoritized racial and gender identities express unease about the notion of normative constructions of human identity encultured in CV, particularly as decisions are based on visual data alone. Yet few are asking *how* these systems are racializing and gendering people in the first place.

Building on the foundation of work I completed on FA—where I examined gender classification in commercial FA technologies—I will contribute a holistic understanding of how human characteristics are operationalized across multiple *layers*: ((1) at the model level, by analyzing the process of human annotation ; (2) at the annotation level, by deeply analyzing, both quantitatively and qualitatively, the work practices of human data annotators; and (3) at the development level, by studying the practices and constraints when developing computer vision systems, including how stakeholders make decisions about identity characteristics. Understanding these perspectives will illuminate the values and decisions about identity throughout the pipeline of FA development and deployment.

My research will develop actionable ways to improve the representation of identity—from the conception of an ML product to its inevitable impact on third-party clients and "users." Specifically, I will contribute a framework for addressing identity representations at different points in the ML pipeline and what tradeoffs are required to address when doing so. In practice, Facebook could apply this actionable framework to any ML products that interface with human characteristics. This research will contribute to the goals of both Facebook, and the broader scientific community, to establish social good and equitable opportunities for individuals of all identities in an increasingly automated world.