AN INTERDISCIPLINARY APPROACH TO SPORTS ANALYTICS IN A UNIVERSITY SETTING

ATHLETE AND CONSUMER DATA PRIVACY CONCERNS

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SOCIOTECHNICAL SYNTHESIS

The wearable technologies and sports analytics industries have been rapidly expanding and are expected to skyrocket for the foreseeable future. This has encouraged the increased adoption of advanced sports analytics techniques in collegiate athletics, which is a large inspiration for the technical project: designing a sports analytics center at the University of Virginia (U.Va.). Additionally, as part of U.Va. President Jim Ryan's 2030 Strategic Plan, U.Va. Athletics is currently undergoing its own master plan to restructure and improve many existing athletics facilities as well as building new state-of-the-art facilities which the sports analytics center will most likely be physically housed in. Transitioning into the Science, Technology, and Society (STS) research, this paper closely examines the current ethical concerns associated with data privacy for student athletes and consumers. The STS research uses the Social Construction of Technology and the Actor Network Theory frameworks to visualize the problem and analyze the relationships between the different actors involved within the context of wearable technologies and data analytics. The technical and STS topics are tightly coupled as the STS research builds off of a specific component of the technical project. One of the high-level objectives of the technical project was to ensure ethical data collection and transparency; this is the focus of the STS research generalized to all consumers, not just student athletes.

The technical capstone project followed a classic systems analysis approach. The team defined the current and ideal scenarios, identified objectives and metrics for success, interviewed key stakeholders, conducted thorough research of sports analytics across the country in a university setting, identified and ranked key alternatives, and ultimately made a recommendation for a sports analytics center at the University of Virginia. There are numerous universities across the country that have a presence in the sports analytics field, but very few schools offer sports

analytics majors or minors. Adding a sports analytics center at U.Va. supplemented with a major and/or minor would give U.Va. an innovative and unique feature, allow U.Va. to increase academic offerings and research, and improve recruiting, performance, and health of student athletes.

The technical capstone team recommends a pan-university sports analytics center with physical space in the athletics department and an interdisciplinary analytics course load that encourages participation from all students across the University. Additionally, the varsity athletics teams need to do a better job safely and ethically collecting and storing data. To that end, the Center will build and maintain a secure database to house all collected data; all teams will have access to this database which will allow teams to be more collaborative with each other.

Tightly coupled with the technical project, the STS research examines the data privacy issues for student athletes and consumers. To analyze this topic, journal articles revealing the current lack of sufficient regulations and blog posts reacting to newly passed legislation were researched. These sources supported the fact that technology companies are not effectively taking the relevant ethical values of consumers into account when developing and implementing big data technologies. Also, giving consumers and athletes more control and ownership of their data is a large transition and will continue to take time to sufficiently improve.

A great example of new legislation meant to give consumers more control over their data is the California Consumer Privacy Act (CCPA). The CCPA went into effect in January, 2020 and impacts technology companies and consumers nationwide. This law is very likely to be followed by many similar laws, eventually creating an environment in which athlete and consumer data are sufficiently protected and used in an ethical manner. To further improve

consumer data privacy, better enforcement of new legislation is necessary to ensure compliance and effectiveness of new laws. Multiple frameworks were used to analyze the relationships between relevant stakeholders and also to display how better enforcement leads to stronger data ownership and control for the consumers who are most affected.

The technical project recommends a sports and performance analytics center at the University of Virginia which will not only benefit the U.Va. Athletics Department, but will also benefit students, athletes, faculty, researchers, trainers, and many other members of the Charlottesville community. The STS research is tightly coupled with the technical project as it builds off of the data privacy aspect of the project. Ideally, new data privacy legislation will be passed and better enforcement of this legislation will exist to satisfy consumer data privacy.

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