Job Description – Additive Manufacturing & Blockchain Research Intern

Ford Motor Company, Research and Advanced Engineering, is hiring a 2019 summer intern. The primary focus of the intern will be evaluating tracking technologies for 3D printed parts, methods for adding the tracking data on a blockchain, and creating a physical prototype combining the above. The intern will also support a research team whose efforts include conducting research in the industries of additive manufacturing, IoT, blockchain and supply chain; in so doing, the intern will help define the direction and strategy for the research. The intern will have experience in software development, tracking technologies (such as RFID), blockchain and preferably additive manufacturing. Most importantly, the intern will have a passion for learning how these technologies work and will be an active contributor to advancing the research team's efforts.

Measurable Objectives

- Identify techniques for creating next generation of trackable 3D printed parts
- Assist with research to help understand the opportunity of combining physical tracking technologies (e.g., RFID) with blockchain for improving the digital thread management process in additive manufacturing supply chain
- Create hardware prototypes using Arduino, Raspberry Pi, etc., to bind the physical tracking with blockchain

Expected Qualifications

- Pursuing Bachelor's, Master's Degree or PhD in Computer Science, Computer Engineering, Electrical Engineering, Mechanical Engineering, Mathematics, or equivalent.
- 2+ years of programming experience in at least two highly utilized programming languages and tools, i.e. C, C++, Java, HTML5, JavaScript, Python, Ruby, Node.js, Go, etc.
- Proven and demonstrable knowledge of the RFID technology or related tracking technologies such as NFC, Bluetooth Low Energy, QR code, etc.
- Proven and demonstrable ability to create rapid prototypes and proof of concepts that combines software and embedded hardware (e.g., Arduino, Raspberry Pi, etc.)
- Either experience or a strong interest in learning about 3D printing and the additive manufacturing technologies and workflow management systems
- Either experience or a strong interest in learning about Distributed Ledger Technologies (DLTs) including blockchain. Prior programming experience in Ethereum, Hyperledger Fabric, Solidity, etc. will be preferable.
- Strong written and verbal communication skills and ability to work with a highly inter-disciplinary team. Self-motivated attitude to problem solving is expected.

Expected Major Contributions

At the end of internship, (1) a functional PoC of a tracking and tracking a 3D printed part on a blockchain, via an embedded tracking technology, such as RFID, and (2) a presentation on newly defined methods for embedding tracking technologies with 3D printed parts, for enabling part traceability on Blockchain.

Desired Qualities

Candidate should have an interest in additive manufacturing and 3D printing and be excited to work in a highly undefined space with lesser amount of supervision and more independence than the average position.

Expected Benefits to Intern

Experience conducting cutting-edge research in a very new field and defining technical solutions for very high profile problems in the automotive and greater supply chain industries

Employment Eligibility Requirement

Candidates for this position with Ford Motor Company must be legally authorized to work in the United States (students with an F-1 Visa with proper work authorization are eligible). Verification of employment eligibility will be required at the time of hire. Visa sponsorship is not available for this position.

Qualified applicants should apply online using requisition number 322732BR "2019 PD – Engineering, Strategy, and Research Intern- Supplemental Only". The online posting can be accessed [here](#) with more information. Interested candidates need to create their online profile, submit their resume and take the Web Based Assessment (WBA) no later than February 15, 2019. NOTE: The WBA will be sent to qualified candidates via email after creation of their online profile.