SAMUEL TUFFOUR

st041@bucknell.edu | samueltuffour235@gmail.com |LinkedIn| Github | My portfolio website

Education

Bucknell University, College of Engineering (Lewisburg, PA) Graduating May 2028

Bachelor of Science in Computer Engineering & Mathematics Minor | Engineering GPA: 3.50 / 4.0 | Dean's List

Relevant Engineering Coursework: Data Structures & Algorithms, Operating Systems, Computer Systems, Algorithms Design & Analysis, Statistics and Engineering, Calculus (1,2), Physics (1,2) Intro to Design and Programming, Introduction to VR Systems.

Skills

Languages: Python, JavaScript/TypeScript, SQL, R, HTML/CSS,

Frameworks: Pandas, NumPy, React, NodeJS, Multi-threading, Django, PyQt

Tools/Systems: Git, SAS,JupyterLab, MySQL, Figma, UNIX/Linux, Unit Testing, Database Management, Data Processing, REST APIs, Unity, Meta Horizon

Other: Code Review, UI/ UX design, Communication Skills, Leadership, Artificial Intelligence, Cloud Infrastructure, Cross-Functional Teams, Automation, Deployment, Project Management, AI Infrastructure

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Experience

Grant Research Assistant

Aug 2024 - Present

Bucknell University, Lewisburg/PA

*Research Assistant under **Prof. Doug Gabauer** - Civil and Environmental Engineering*

- Partnered with **UNC** on an **externally funded transportation research** project to predict roadway departure crashes, supporting federal highway safety initiatives.
- Built a custom data collection program to capture **5,000+ street-view photographs** and estimate roadside device distances with sub-meter accuracy, improving reliability of safety infrastructure datasets.
- Processed and analyzed **1,200+ public crash records** to assess occupant injury risk, extracting deformation features from vehicle photographs to evaluate compartment integrity.
- Applied **MATLAB** and **SAS** to summarize deformation trends and **refine crash test evaluation limits**, contributing to safer design guidelines for guardrails and roadside features.

Engineering Excelerators

June 2025 - July 2025

Bucknell University, Lewisburg/PA

Summer undergraduate Teaching Assistant

- Guided **20+ students** in designing and building **VR museum spaces** using **Meta Quest 3**, resulting in an immersive educational experience for **K–12 learners**.
- Supported **rapid prototyping and iterative design workflows**, reducing **user interaction bugs by 40%** across team projects.
- Collaborated with **interdisciplinary student teams** to improve usability and engagement within **VR environments**, enhancing project showcase quality and **user immersion**.

Projects

**Other personal projects available on Github/portfolio website*

CODEFORCODE – Molecular Biology Simulation Tool *(Python, PyQt5, Turtle)* **Project Link**

- Developed an **interactive desktop app** simulating the Central Dogma of molecular biology, enabling transcription, translation, and mutation analysis of non-template DNA sequences.
- Engineered **graphical visualization** of DNA, mRNA, and protein chains, combining biological accuracy with **intuitive UI** for students
- Designed modular architecture with user input, sequence editing, and mutation tracking, enhancing biological data interpretation and learning.

Virtual Reality Sports Museum **Project Link**

Meta Horizon, Unity, TypeScript, 3D modeling.

Extracurriculars - Engineering Success Alliance, Engineering Excelerators, Google Developer GroupMember, ColorStack, National Society of Black Engineering(NSBE), RoboLab