Forrest Meng

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EDUCATION

Virginia Polytechnic Institute and State University, Blacksburg, VA *Anticipated Graduation May 2025*

*GPA – **4.0 / 4.0***

Bachelor of Science in Computer Engineering | Minors: Human Computer Interaction, Computer Science

Awards/Recognition: Calhoun Honors Discovery Program Scholar, LabLab Cohere Hackathon (1st Place), LionHacks (2nd Place Arbitrum Track), Streamline Climate AI Hackathon (Best CO2 Reduction), MLOps LLM Hackathon (1st Place), Neo Scholar Finalist

Thomas Jefferson High School for Science and Technology, Alexandria, VA *August 2017 – June 2021*

EXPERIENCE

Software Engineering Intern, Roblox, San Mateo, CA *May 2023 – Present*

- Launching a new "Interactable" dev-facing state and higher fidelity APIs for GUIObjects in production Studio and Game clients.
- Leading cross-team system design meetings on new UI state implementation and integration with legacy C++ components.
- Accelerating the performance of UI state changes with async layer data model tasks and efficient quadtree collision checks.

Full Stack Contractor, Tholos, Remote *June 2023 – July 2023*

- Formalized EIP-1559, legacy, and L2 gas fee and price estimation for transaction APIs using Alchemy API and Web3.eth.

Founder, Artscaper.net, Fairfax, VA *November 2022– July 2023*

- Building an image search and real-time collaborative reference tool for artists using SvelteKit, Typescript, and TailwindCSS.
- Incorporating OpenAI GPT-3.5 API for query generation with Weaviate and FAISS for returning semantically relevant images.
- Released a demo in early February with startup incubation in progress and built websocket-based live canvas collaboration.

Software Engineering Intern, SCOUT Inc., Alexandria, VA *May 2022 – August 2022*

- Trained EfficientPose algorithm-based AI and CV model to detect the attitude for LEO space domain awareness applications.
- Automated the generation and evaluation of 16,000 images, achieving an 85% pose detection accuracy from the AI model.
- Deployed Channels on a Django server for a space optics web visualizer, returning a Blender render determined by user input.

RESEARCH AND EXTRACURRICULARS

Undergraduate Research Assistant, Collaborative Robotics Lab, Blacksburg, VA *August 2022 – Present*

- Implemented real-time SLAM algorithms on a FETCH Mobile Manipulator robot through collected visual and infrared data.
- Trained risk-averse ML algorithm to CARLA for a user study scenario where the robot predicts and guides a human's behavior.

Director of Operations, Student Engineers' Council at Virginia Tech, Blacksburg, VA *September 2021 - Present*

- Organized and photographed the first SEC Engineer's Ball at Virginia Tech and the largest college career fair on the East Coast.
- Spearheaded new publicity campaigns, resulting in 3000% more account and user engagement on SEC social media accounts.

Team Lead, Latis Network, Blacksburg, VA *December 2022– May 2023*

- Prototyped secure over-the-air industrial IoT firmware update pipeline built on decentralized ledgers and hardware keys.
- Employed Hedera contracts to facilitate transaction consensus and staged files on IPFS for Filecoin decentralized blob storage.
- Reported the project to Boeing CEO and execs, showcasing applications of DLTs in mitigating unauthorized firmware access.

Team Lead, Haptic Tactics, Blacksburg, VA *December 2021 – May 2022*

- Directed a team in prototyping a hand drill VR proxy for aerospace manufacturing XR training and demoed to Boeing's CSO.
- Engineered a novel closed loop control system for BLDC-based haptic feedback using impedance-based Arduino libraries.
- Designed a Unity VR environment with visual-auditory feedback, improving the haptic illusion by 80% from initial user studies.

Undergraduate Research Assistant, Assistive Robotics Lab, Blacksburg, VA *August 2021 – May 2022*

- Developed regression algorithm to predict exoskeleton gait-phases from ESP 32 data streams with Python and MATLAB.
- Upgraded the ergonomics of walking gaits with varying motor compression by using C++ to detect the stage of a step from analyzing sensor input streams for linear regression and pattern recognition to reduce overfitting of the prediction model.

ADDITIONAL INFORMATION

Technical Skills: Python, C++, C#, Java, C, TypeScript, Svelte, ReactJS, Django**,** Linux bash, TailwindCSS, MATLAB, GitHub, Keras, Jupyter, Tensorflow, SKLearn, NextJS, Unity, Blender, OpenCV, AWS, Arduino, Adobe CC, Figma, Verilog, .Net Core, LTSpice, Rust

Languages: English (Native, Fluent), Mandarin Chinese (Verbally Fluent)

Personal Interests: Photography, Art, Entrepreneurship, Stock Trading, Personal Fitness, Foreign Affairs, Graphics, Reading