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
Relevant Coursework: Advanced Machine Learning, Signals and Systems, Linear Algebra, Discrete Math, Embedded Systems
Awards/Recognition: Calhoun Honors Discovery Program Scholar, VT Dean's List (Fall 2021 – Present), HackDuke 2021 (Best Financial Hack), HackViolet (Ut Prosim Award), VTHacks 2022 (Best React Hack), LabLab Cohere Hackathon (1st Place)

Thomas Jefferson High School for Science and Technology, Alexandria, VA *August 2017 – June 2021*
*GPA – **4.45W***
Advanced Studies Diploma, Governor's Seal

EXPERIENCE

Incoming Software Engineering Intern, Roblox, San Mateo, CA *May 2023*

Founder, Artscaper.net, Fairfax, VA *November 2022-Present*
- Building an image search engine and web-based reference board tool for artists using SvelteKit, Typescript, and TailwindCSS.
- Incorporated OpenAI GPT-3.5 API for query generation with Neo4J and FAISS for returning semantically relevant images.
- Released a demo in early February with startup incubation in progress and received over 30 unique users in the first weekend.

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.
- Merged risk-averse ML algorithm to CARLA for a user study scenario where the robot predicts and guides a human's behavior.

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.
- Pioneered full-stack development of a space optics interactive visualizer and renderer using Typescript, ReactJS and Three.JS.
- Deployed an ASGI Django backend with Channels that tracks a queue and returns a Blender render determined by user input.

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*
- Analyzed exoskeleton gait-phase data from sensor with Python and MATLAB to program predictions for heel strikes in gait-phases to provide general gait assistance through an ESP 32 microcontroller without knowing the exact walking pattern.
- 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.

LEADERSHIP AND COMMUNITY INVOLVEMENT

Publicity Chair, Student Engineer 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 3000% more account and user engagement on SEC social media accounts.

Controls Engineer, BOLT Electric Motorcycle, Blacksburg, VA *November 2021 – September 2022*
- Decreased lithium-ion battery testing by 9 times by automating a test-bench using new hall effect sensor wiring, Tensorflow edge-detection computer vision for multimeter screens, and logging temperature, current, and voltage data for MATLAB.
- Researched original data sheets for the Yamaha R1 throttle and switch for testing the effectiveness of the potentiometer.

ADDITIONAL INFORMATION

Technical Skills: Python, C++, C#, Java, 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 Policy, Metaverse, Ethics