Forrest Meng

forrestmeng.com | forrestm@vt.edu | +1 (571) 386-9265 | linkedin.com/in/forrestmeng629/

EDUCATION

Virginia Polytechnic Institute and State University, Blacksburg, VA   *Anticipated Graduation Dec 2024*
*Bachelor of Science in Computer Engineering (Machine Learning) | Minors: Computer Science – **4.0 GPA***
Awards/Recognition: Calhoun Honors Discovery Program Scholar, LabLab Cohere Hackathon (1st Place), LionHacks (2nd Place Arbitrum Track), Streamline Climate AI Hackathon (Best CO_2 Reduction), MLOps LLM Hackathon (1st Place), Neo Scholar Finalist

WORK EXPERIENCE

Incoming Software Engineering Intern, Susquehanna International Group, Bala Cynwyd, PA   *June 2024 – August 2024*

Software Engineering Intern, Roblox, San Mateo, CA   *May 2023 – August 2023*
- Launched a new "Interactable" dev-facing state and higher fidelity APIs for GUIObjects in production Studio and Game clients.
- Lead cross-team system design meetings on new UI state implementations and algorithms with legacy C++ components.
- Accelerated the performance of UI state changes with async layer data model tasks and efficient quadtree collision checks.

Part-time Web3 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.

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, PROJECTS, AND EXTRACURRICULARS

Undergraduate Researcher, Wireless @ VT, Blacksburg, VA   *October 2023 – Present*
- Researching novel semantic quantization for improving joint source channel coding algorithms to transfer multimedia data.

Director of Operations, Student Engineers' Council at Virginia Tech, Blacksburg, VA   *September 2021 – Present*
- Organized the largest college career fair on the East Coast, hosting 300+ companies and bringing in $700k in revenue.
- Spearheaded new publicity campaigns, resulting in 3000% more account and user engagement on SEC social media accounts.

Founder, Artscaper.net, Fairfax, VA   *November 2022– July 2023*
- Built an image search and real-time collaborative reference tool for artists using SvelteKit, Typescript, and TailwindCSS.
- Incorporated OpenAI GPT-3.5 API for query generation with Weaviate and FAISS for returning semantically relevant images.
- Onboarded 50 beta testers and art studios with a secure OAuth, SMTP server, and custom built websocket-based live canvas.

Research Project, NeRF This, Blacksburg, VA   *February 2023 – July 2023*
- Systematized stable diffusion models with neural radiance field pipeline to increase visual accumulation in NeRF render.
- Formulated a "camera-walk" algorithm, moving the camera matrix along NeRF normals to generate new views stochastically.

Undergraduate Research Assistant, Collaborative Robotics Lab, Blacksburg, VA   *August 2022 – June 2023*
- 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.

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.

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++, Java, C, TypeScript, Svelte, C#, ReactJS, Django**,** Linux bash, TailwindCSS, MATLAB, GitHub, Keras, Jupyter, Tensorflow, SKLearn, NextJS, Unity, Pandas, OpenCV, AWS, Arduino, Vagrant, QT, Figma, Verilog, .Net, LTSpice, Rust
Languages: English (Native, Fluent), Mandarin Chinese (Verbally Fluent)