Forrest Meng

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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 CO2 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 APIs for GUIObjects and an "Interactable" dev-facing state in production clients for over 9 million developers.
- 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.

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.

Research Project, NeRF This, Blacksburg, VA *February 2023 – July 2023*

- Systematized diffusion-generation of training data in pre-rendered NeRFs, improving visual accumulation ratios by 17%.
- Formulated a "camera-walk" algorithm, moving the camera matrix along NeRF normals to generate new views stochastically.

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.

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

- 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, Sveltekit, TypeScript, C#, ReactJS Linux, React Native, TailwindCSS, MATLAB, GitHub, Keras, ROS, Firebase, Jupyter, Tensorflow, SKLearn, NextJS, Unity, OpenCV, AWS, Arduino, Vagrant, QT, Figma, Verilog, .Net, Rust

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