Raven Mott

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Education

Virginia State University | Bachelor of Science | Computer Science | Expected graduation: Spring 2026 | Petersburg, VA | Cumulative GPA: 3.7 | EST University STEM Scholarship | Honors Student | Undergraduate Researcher

Technical Skills

Programming: Java, R, Python, C++, Kotlin | **Database:** SQL | **Web Development:** HTML, CSS, JavaScript, Bootstrap, Flask, Firebase (Auth, Firestore, Storage, Functions) | **Machine Learning:** SVM, Logistic Regression, Decision Tree, K-means Clustering, LSTM, XGBoost, GBM **| Data Visualization:** Tableau, PowerBi | **Cybersecurity & Digital Forensics:** Cisco Packet Tracer, Autopsy, FTK Imager, Wireshark | **UI/UX Design:** Figma

Research

Virginia State University Nuclear Science Lab *Jan–May 2024 | Petersburg, VA (140hrs)*

Support Vector Machine (SVM) for Neutron Event Classification (Real Data)

- Developed and optimized an SVM model using real scintillator detector data from the MAME project.
- Achieved ~95% accuracy, with the linear kernel performing best in comparison to other kernels.
- Fine-tuned hyperparameters, maximizing F1-score (0.93) and AUC (0.96).

Fisk University & Meharry Medical College *Summer 2025 | Nashville, TN (200hrs)*

Climate Change and Agricultural Yield Prediction Using Deep Learning

- Researched climate change impacts on U.S. crop yields using USDA yield data (2017–2022) merged with WRF-HRRR high-resolution climate simulations.
- Engineered stress indicators (heat-day streaks, drought duration) to capture extreme event effects on yield.
- Built and evaluated models including Random Forest, XGBoost, Gradient Boosting, and LSTM, with LSTM achieving $R^2 > 0.93$ and significant RMSE reduction.

Work Experience

Data Science for the Public Good. *Summer 2024 | Petersburg, VA*

Urban Heat Island Analysis

- Conducted a spatial analysis of heat distribution in Petersburg, VA, examining the impact of tree cover, building density, and socioeconomic factors.
- Processed data from satellite imagery, census surveys, and PurpleAir sensors using R.
- Identified a negative correlation ($R^2 = 0.60$) between tree cover and temperature, helping prioritize air monitor placements.

Savannah River Environmental Sciences Field Station (SRESFS) *Summer 2025 | Aiken, SC*

Cybersecurity Risk and Network Analysis

- Conducted risk assessments for simulated business and research networks, identifying critical vulnerabilities in cloud-based and IoT systems.
- Built secure network topologies using Cisco Packet Tracer, including VLAN segmentation, firewalls, and intrusion detection.
- Completed Digital Forensics Essentials (DFE v1) labs, gaining hands-on experience in disk forensics, memory analysis, log examination, and evidence handling.

Personal Project

Gestura – AI-Powered ASL Translation & Accessibility Platform ***(80+ hrs)***

- Developed an AI-powered mobile app that translates ASL gestures into text and speech in real time, with avatar-based reverse translation.
- Implemented a camera-based ASL recognition pipeline optimized for low-latency mobile inference.
- Integrated Firebase (Auth, Firestore, Storage) for user management, gesture data collection, and AI model updates.
- Built a gesture contribution workflow with validation and tracking to support continuous model improvement.

Leadership/Activities/Extracurriculars

- VSU Tour Guide – Led 50+ campus tours for groups of 4 to 100 people, enhancing prospective student engagement and university outreach.
- Apple Pathways (2024) – Completed workshops on resume building, professionalism, advanced algorithms, and software development methodologies.
- DEA Mentorship Program (2023) – Developed workplace professionalism, ethical judgment, leadership, and collaboration skills in a technical environment.