

# Giselle McPhilliamy

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## Education

- Georgia Institute of Technology – College of Computing | Atlanta, GA** August 2025 - May 2026  
M.S. in Computer Science: Machine Learning GPA: 4.0
- **Machine Learning Graduate Teaching Assistant** - Quiz Development & Ed Discussion Team
  - Key Courses: Deep Learning, LLM, Deep Reinforcement Learning, Big Data Systems, Data & Visual Analytics
- B.S. in Computer Science | Minor in Biology | Honors Program August 2021 - May 2025  
GPA: 3.94
- Artificial Intelligence & Information Internetworks
  - Key Courses: Machine Learning, Computer Vision, Algorithms, Distributed Systems & Networks, Database Systems
- Universitat Politècnica De Catalunya - Georgia Tech Summer Study Abroad | Barcelona, Spain** May - August 2023

## Skills

**Languages:** Python, Java, C/C++, SQL, Javascript, CSS, HTML, MATLAB  
**ML / Data:** PyTorch, HuggingFace, NumPy, Pandas, Sklearn, TensorFlow, Spark, WandB  
**Systems / Deployment:** CUDA, TensorRT, OpenMP, Nsight, NVIDIA Jetson, Raspberry Pi, Linux  
**Frameworks / Tools:** Git, Docker, Django, Flask, Firebase, MongoDB, AWS, GCP, Oracle Cloud, Databricks  
**Organizations:** AI Safety Initiative @ GT, Common Good Georgia Tech, Run Club GT, Alpha Gamma Delta

## Work Experience

- Briteseed, LLC. | Machine Learning Engineering Intern | Chicago, IL** May – Aug 2025
- Designed CNN for hyperspectral tissue classification using spatial-spectral fusion and multi-task learning, achieving >90% accuracy; patent process initiated
  - Derived data features using tissue optical properties; handled class imbalance and enforced leakage-safe splits
  - Deployed quantized ONNX/TensorRT model to Jetson Orin Nano with Raspberry Pi DAQ system, enabling real-time inference on streamed sensor data (33ms intervals) for live tissue localization visualization
  - Presented final framework to Senior Leadership Team, including CEO and outside patent counsel
- Skolnick Research Group | Undergraduate Researcher | Atlanta, GA** Nov 2024 – May 2025
- Built a genomic data pipeline to reconstruct mutation-labeled sequences from COSMIC CMC using GRCh37 reference genome
  - Fine-tuned DNABERT & trained a leakage-safe classifier (StratifiedGroupKfold) to predict mutation pathogenicity tiers
- F5 Networks | Software Engineering Intern, Rapid Development Team | Seattle, WA** May – Aug 2024
- Built a Django service to process Salesforce bug tickets (missing IDs, typos, fragmented metadata) into engineer-ready reports
  - Developed a TF-IDF based retrieval plugin to match incoming bugs to resolved tickets, surfacing relevant fixes and reducing duplicate debugging
  - Deployed pluggable framework to F5 internal servers (VPN-accessible) for real-time bug triage and automated notifications
- Briteseed, LLC. | Software and Hardware Engineering Intern | Chicago, IL** May – Aug 2022
- Developed & deployed device for robotic assisted ex-vivo prototype testing, reduced test cycle time by over 30%
  - Automated the trend analysis of medical device data via a MATLAB script, reducing daily data analysis time by 90%
  - Developed a baseline logistic regression model to verify data learnability; analyzed feature weights to inform model design

## Projects

### Software Application for Medical Emergencies (S.A.M.E)

- Led 6-person team to build a clinical decision support app for Emory's medical trainees, mapping patient symptoms to ranked diagnoses and treatments plans in <750ms using KNN
- Built Firebase backend with role-based access (trainee v. admin) and RESTful API to manage data in a HIPAA-compliant system
- Worked directly with Emory physicians in weekly Agile sprints to refine system behavior based on clinical use

### Source Diversity (Ongoing Research)

- Built data pipelines to collect and tokenize 1B-token multilingual corpora from Wikipedia and mC4 across 5 languages
- Pre-trained XLM-RoBERTa-base H100 GPU cluster; evaluated efficiency on the MMTEB benchmark

### Textile Vision – Fashion Image Generation

- Built CLIP-conditioned diffusion model for text-to-image generation, achieving Inception Score of  $8.1 \pm 1.1$
- Implemented cross-attention conditioning and conducted ablation studies to optimize embedding performance

### Built and Programmed CNC Machine

- Designed CNC machine and assembled hardware to achieve sub-mm precision in navigating 3-D space
- Built MATLAB GUI to control Python backend on Raspberry Pi with Arduino board, CNC shields, and servo motors

## Leadership and Teaching Experience

President, former VP Finance | Cleanup Crew Georgia Tech – Atlanta, GA

Aug 2023 – May 2025