

# TIM PHAN

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## EDUCATION

### GEORGIA INSTITUTE OF TECHNOLOGY

#### Master of Science in Computational Science and Engineering (Thesis)

Atlanta, Georgia

December 2026

- GPA: 4.0
- Coursework: Deep Learning, Natural Language Processing, Computational Data Analysis

### GEORGIA INSTITUTE OF TECHNOLOGY

#### Master of Science in Quantitative and Computational Finance

Atlanta, Georgia

May 2026

- GPA: 4.0
- Coursework: Numerical Methods in Finance, Fixed Income Securities, Derivative Securities

### GEORGIA INSTITUTE OF TECHNOLOGY

#### Bachelor of Science in Business Administration

Atlanta, Georgia

December 2024

- GPA: 4.0
- Major: Information Technology Management
- Coursework: Object-Oriented Programming, Databases, Analytics, Python for Data Science, Data Prep & Visualization

## EXPERIENCE

### AI @ GEORGIA TECH BYTEFIGHT

#### Algorithm Developer

Atlanta, Georgia

April 2025 – May 2025

- Developed a Snake Player vs. Player bot with Python to compete against other players, winning top 8 with ~60% win-rate
- Implemented turn-by-turn simulation framework with BFS “tail-reachability” checks, eliminating self-collision by 92% and extending average survival time from 300 turns to 2000 turns, increasing win-rate by 5%
- Designed portal-aware A\* pathfinding algorithm that computes optimal 8-direction paths to food and enemy snake head in under 30 ms

### SMURFIT WESTROCK

#### IT&D Intern

Atlanta, Georgia

May 2024 – August 2024

- Facilitated device replacement to transition to Windows 11 across the organization, ensuring alignment and smooth transition to support Win11 Project
- Gathered requirements, assessed functionalities, and provided feedback for the MachONE Foundation project to ensure minimal disruption to business operations with rollout of new system
- Assisted in the development and maintenance of the Digital Transformation Office SharePoint site for the Smurfit Westrock intranet, enhancing accessibility and usability for stakeholders

## PROJECTS

### MULTI-MODAL DEEP LEARNING FOR NON-INVASIVE CARDIAC OUTPUT (WIP)

#### Team Member (Conference Submission Planned)

Atlanta, Georgia

May 2025 – Present

- Non-invasive SV estimation from ECG, SCG, and PPG using leave-one-pig-out cross-validation on six porcine subjects
- Benchmarked raw-signal deep learners (CNN-LSTM, Early/Mid/Late-Fusion Transformers) alongside feature-based models (DeepConvLSTM) via systematic hyperparameter grid search
- Achieved RMSE 9.3–13.1 mL, MAPE 15–23%, and Pearson R up to 0.71, comparable performance to baselines

### CADUCEO

#### Team Member (Hacklytics 2025)

Atlanta, Georgia

February 2025

- Developed a healthcare cost analysis chatbot leveraging OCR, NLP, and ML to detect overcharges in medical bills, delivering accurate charge classification and explanations through a conversational interface
- Engineered a multimodal AI pipeline using Azure AI Vision (OCR), a 4-bit quantized LLaMA 3.2B model, DBSCAN clustering, and MongoDB/Snowflake, achieving >0.90 Silhouette coefficient for charge anomaly detection
- Won 2nd Place in Assurant Challenge: Revolutionize AI Solutioning with Multimodal Agentic AI, working in a team to build an end-to-end solution combining LLMs, clustering algorithms, cloud services, and real-time data infrastructure

## SKILLS

**Programming:** Python, R, SQL

**Technology:** Machine Learning, NumPy, Pandas, TensorFlow, PyTorch, scikit-learn, ETL, Tableau, Azure, GitHub

**Affiliations:** Trading Club, Data Science at Georgia Tech, Investments Committee, Barbell Club

**Interests:** Machine Learning, Powerlifting