# ASHISH PANCHAL

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## EDUCATION

**Georgia Institute of Technology - College of Computing (GaTech)** *2021-2024*
M.S. in Computer Science
GPA: 3.8/4.0
*Related courses: Reinforcement Learning, Deep Learning, Machine Learning, Artificial Intelligence, AI for Robotics, Game AI, Ethics in AI, Data & Visual Analytics, Graduate Algorithms*

**Army Institute of Technology, India (AIT-Pune)** *2012-2017*
B.E. in Electronics and Telecommunication
GPA: 3.5/4.0, (AGIF Scholarship Recipient)
*Related courses: Soft Computing, Internet of things, Information Theory, System Prog. and Microcontrollers*

## RESEARCH INTERESTS

I am inspired to design generalisable, expressive decision-making frameworks for sequential socio-economic settings. I aim to improve AI agents' adaptability in human–AI collaboration through reinforcement learning and complementary methods, and data-driven models that capture complex, context-dependent human behaviour.

## PUBLICATIONS

[1] A. Panchal, V. Medisetti, and V. Pamuru, "LLMs have inner lives (and they're exploiting each other): Why AI safety must confront the cognitive attack surface of induced personas," in ***NeurIPS** 2025: Position Paper Track (Under Rebuttal)*, 2025.

[2] A. Panchal and V. Pamuru, "Bargaining under breach: Prompt hacking and the integrity of economic LLM negotiations," in ***MIS Quarterly**: Special Issue - Artificial Intelligence-Information Assurance Nexus (Under Submission)*, 2025.

[3] A. Panchal and V. Pamuru, "Temporal dynamics of deception: Investigating sleeper LLM activation and human trust," in ***MIS Quarterly**: Special Issue - Artificial Intelligence-Information Assurance Nexus (Under Submission)*, 2025.

[4] A. Panchal and V. Pamuru, "Unraveling complex sequential social dilemmas: In a risky world with A2C decision transformer," in *The First MARW: Multi-Agent AI in the Real World Workshop (**AAAI**)*, 2025.

## RESEARCH EXPERIENCE

**Asymmetric Persona Induction in AI-AI interaction : Negotiation study [1]** Spring 2025
*Supervisor: Prof. Vijay Medisetti* Georgia Tech

· Engineered an LLM agent framework and conducted experiments revealing how induced personality traits create exploitable asymmetries and strategic advantages in bilateral AI negotiations. Identified causal pathways for behavioral emergence via mediation and moderation analysis (Rebuttal: NeurIPS 2025 )

**Offline Inverse-RL for to over come Structural modeling limitations** April 2025 - Present
*Supervisor: Prof. Srikanth Jagabathula* NYU Stern & ISB

· Applied data driven offline Inverse-RL to model actor behaviour in various economic settings; to overcome strong assumptions of traditional structural modeling techniques. *(In Progress)*

**Guardrails against Persona induced AI in Human-AI Collaboration [2], [3]** May 2025 - Present
*Supervisor: Prof. Vandith Pamuru* Indian School of Business

· Designed and analyzed guardrails against Persona Induced AI manipulations in an empirical negotiation study with humans, at zero shot; IRB-approved,(Abstract Submitted: MISQ AI-IA NEXUS 2025 )

**Adaptive Decision-Making in Evolving Social Situations using A2C-DT [4]** Aug. 2024 - Mar. 2025
*Supervisor: Prof. Vandith Pamuru* Indian School of Business

· Developed a simplified game environment, and A2C-Decision Transformer (A2C-DT), a RL model for implicit social learning, achieving 86% winrate against random opponents; (Accepted) AAAI-2025 MARW workshop.

**Precipitation Quantification in Cell Culture Media via Vision Transformers** Spring 2024
*Self-Led Class Project — for Multus Biotech* Georgia Tech

· Developed and evaluated Vision Transformer models for automated precipitation scoring in cell culture images, achieving 96% accuracy, showing potential for acute and imbalanced data classification in cellular agriculture.

**B.E. project: Integrated Voice-Based NLP for Web & Home Automation** Spring 2024
*Supervisor: Prof. Dhananjay Auradkar* Army Institute of Technology

· Developed a novel system utilizing a highly accurate (89%) Naive Bayes classifier to provide voice-activated web search assistance and seamless control of home appliances and social media applications.

**Exploratory (Self-Led and Class Projects):-** 2021-2024

· Social Listening-Based Crypto Market Prediction Engine: Developed an end-to-end system using transformers to summarize information and predict cryptocurrency prices by incorporating investor sentiment from social media, achieving an MSE of 0.04. (Selected for CreateX GT)
· Multi-Agent RL for Google Football: using Decentralized-QMIX & Centralized-PPO.
· DQN for Lunar Lander with Stability Enhancements: Analyzed the impact of skip-step learning, target networks, and exp-replay on mitigating the "deadly triad".
· Replication and Critique of TD-Learning: Analyzed Sutton's TD-learning algorithm, providing empirical evidence challenging the assumptions on random weight initialization convergence.
· Drone Navigation and Mapping in Simulated Jungle: using online Graph-SLAM.
· Warehouse Assortment Robot with Dynamic Path Planning: using A-star and dynamic programming.
· CNN Saliency Methods and Neural Style Transfer: Explored and implemented various saliency map techniques (Class Visualization, Class-Specific Saliency, Fooling Images, GradCAM) using SqueezeNet, and performed neural style transfer to analyze and manipulate CNN decision-making.
· Implementation of Sequential Models: RNN, LSTM, Seq2Seq, and Transformer models from scratch.

## VOLUNTEER EXPERIENCE AND EXTRA-CURRICULAR

WITS conference volunteer: Event coordination and assistance. (Tracks: ML/AI, DEI, Recom. sys.) *2023*
WISE conference volunteer: Track coordinator (Platforms and Misinformation; AI and governance) *2023*
Environmental Synergies in Development (ENSYDE-NGO): E-waste awareness at various conventions *2017-present*
Youth for Seva (YFS): Volunteered with YFS teaching children at government schools. *2018-present*
Youth For Parivarthan: Led community-driven initiatives to clean & revitalize public areas *2018-2022*
Teaching : Designed a course and taught Machine Learning, Data Science and Python programming new joinees at MoneyView *2021-2023*
Teaching : Mentored second and third-year Bachelor of Engineering students on the practical implementation of industry-relevant projects *2014-2016*

## MILITARY EXPERIENCE

Academics and Military Training (2013-2014) at prestigious National Defence Academy (India)

## INDUSTRY EXPERIENCE

**Senior Data Scientist, MoneyView** Nov 2021 - Feb 2023

· Risk model for customer segmentation on imbalanced loan data. (XGBoost - Production)
· Developed delinquent geolocation hot-spot identification module, reduced loan delinquency risk by 30%.
· Implemented fuzzy name matching for credit fraud/imposter detection. (Fuzzylogic- Production)
· Designed end-to-end data analytics pipeline for customer risk behavior analysis.

**Senior Consultant: Data Science (Team-lead), Quantzig** July 2019 - Nov 2021

· Demand Forecasting: Developed probabilistic model (XGBoost, Ridge Regression) improving intermittent demand forecasting by up to 3x over SAP for a global chemical giant.
· Analytics Roadmap and Marketing Mix Modeling: Designed custom analytics roadmap and MMM (SAMIRAX, Bayesian methods) incorporating econometric factors for a major US furniture retailer.
· Keyword Bidding Optimization: Optimized keyword bidding via NLP analysis of social media chatter, 3500x improvement in target identification for a major FMCG brand.
· Sales Channel Optimization: Analyzed channel cannibalization (attribution modeling, Random Forest) for a multi-channel retailer.

**Business Technology Analyst, Deloitte US-India** July 2017 - June 2019

· Okta Systems Analysis & Automation: Analyzed key metrics and created processes to improve employee application availability and reliability, predict future license needs, & automate inactive user deactivation.

## ACHIEVEMENTS

Project selected for CreateX startup lab, Georgia Institute of Technology *2022*
Star of the Quarter, Quantzig, Awarded by HOD for exceptional project delivery *2020*
Super Star Award, Quantzig, Awarded by VP for exceptional yearly contribution *2020*
Spot Award, Deloitte USI, Awarded by HOD *2019*
Recommended for Officers Training Academy (Indian Army - Engg.) All-India-Rank: 13 *2018*
Recommended for National Defence Academy(Indian Army) All-India-Rank: 107 in 400,000 applicants *2013*

## SKILLS

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|---|---|
| **Programming Languages** | Python, R, C#, SQL |
| **Machine Learning Tools** | TensorFlow, PyTorch, Scikit-Learn, Pandas, NumPy, Matplotlib, Seaborn, RL, DL, NLP, CV |