Andrei Biswas

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Education

M.S. in Artificial Intelligence, *Northeastern University* *Boston, MA* | September 2024 - Present
- **GPA:** 4.00/4.00 | **Coursework:** Machine Learning, Foundations of Artificial Intelligence, Algorithms, Programming Design Paradigm

B.S. in Computer Engineering, *Rochester Institute of Technology* *Rochester, NY* | August 2016 - May 2021
- **GPA:** 3.74/4.00 | **Minor:** Music & Technology | **Honors:** Magna Cum Laude, Honors Program (top 5% of university students), Dean's List (all terms)

Experience

Teaching Assistant, *Northeastern University* *Boston, MA* | January 2025 - Present
- Providing academic support to **211 students** through weekly office hours and feedback on **AI/ML assignments**, achieving a **95% consistent attendance rate**.
- Collaborating with professor to enhance course content & mentoring students on projects implementing **supervised-learning models**.

Product Manager, *Microsoft* *Cambridge, MA* | October 2021 - May 2023
- Drove **25% annual user growth** through cross-company collaboration with Google engineers, enabling Microsoft 365 apps sign-in using Google Workspace accounts.
- Architected log collection pipeline that met regulatory compliance requirements for private cloud customers, adding **$100 million in annual revenue** and **reducing support tickets by 70%**.
- **Enhanced security for 7+ million Android devices** without impacting current user experience by implementing solutions that follow updated password definitions.
- Implemented **critical engineering and customer support KPIs** to a **monitor 99.9% annual uptime** guarantee, identified performance bottlenecks across microservices and automated support processes, which **reduced system latency by 5 minutes** and **case resolution time by 50%**.
- Architected **European Union data protection features for 3 Microsoft apps on Android**, implementing a full-stack solution that balanced compliance requirements with optimal user experience, **resulting in 100% compliance**.

Program Manager Intern, *Microsoft* *Cambridge, MA* | June 2020 - August 2020
- Scoped the **MVP requirements for a new service** for smartwatch management based on customer evidence and market fit.
- Created product roadmap based on customer feedback and market analysis and led cross-functional feature development from concept through launch, **reducing feature backlog by 25%**.

Software Engineer Intern, *Ahold Delhaize USA* *Quincy, MA* | January 2020 - May 2020
- Architected Stop & Shop website chatbot leveraging **Rasa NLU framework** with **fine-tuned BERT transformer architecture** for intent classification and entity extraction, serving **4+ million monthly visitors** with **85% first-time resolution rate**.
- **Boosted feedback efficiency 20x** by rebuilding **A/B testing** for conversation flows with **Kubernetes-orchestrated Docker containers** for **parallelized CI/CD pipelines** deployed on **Azure Kubernetes Service** with **Azure Monitor** for telemetry, **Azure DevOps** for pipeline automation, and **Azure Cognitive Services** for sentiment analysis.

Software Engineer Intern, *Ahold Delhaize USA* *Mooresville, NC* | January 2019 - August 2019
- Built and refined **Amazon Go-style grocery store checkout prototypes** using **Jetson Nano** as the embedded computer running **OpenCV** with **custom-trained YOLOv4 model** for customer tracking and object detection and **Docker** for containerization - **reducing checkout time by 45 seconds per customer, development costs by 45%, and setup time by 60%**.

Undergraduate Research Assistant, *Rochester Institute of Technology* *Rochester, NY* | May 2017 - August 2018
- Developed a machine monitoring system using audio signal processing by **implementing a SVM algorithm** that achieved **90% accuracy** in industrial environments.
- Created visualization tools with **PyQt and Matplotlib** for interactive dashboards and real-time signal analysis graphs, demonstrating system performance metrics and prediction confidence.

Projects

Windows Malware Prediction
- Engineered a Windows malware detection classifier through data analysis using **Pandas** and feature engineering on telemetry from **8.9 million devices**, then trained multiple models (**XGBoost, LightGBM, and deep neural networks using PyTorch**) - achieving **20% improvement** in both accuracy and runtime performance compared to baseline implementations.

Equiloan: AI-Powered Loan Marketplace
- Designed a **deep reinforcement learning environment** modeling a loan market with realistic financial indicators, random economic cycles, and **DQN agents** as lenders and borrowers with reward structures that incentivized sustainable practices, which resulted in emergent behaviors matching real-world principles and increased total system liquidity.

Skills

Languages: Python, Java, Kotlin, JavaScript, MATLAB, Shell | **Frameworks:** PyTorch, TensorFlow, scikit-learn, Pandas, NumPy, React, Agile (Scrum, Kanban), Lean, Design Thinking | **Tools:** Jupyter Notebooks, Google Colab, Jira, Confluence, Azure DevOps, Figma, Google Analytics, Git, CI/CD pipelines, Docker | **Techniques:** Neural Networks, Deep Q-Networks, Supervised Learning, Reinforcement Learning, Computer Vision, XGBoost, LightGBM, NLP, Deep Learning | **Platforms:** Microsoft Azure, Google Cloud Platform