Derek Austin

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Experience

Galileo (LLM Evaluation & Observability) **New York, NY**
Machine Learning Research Lead Feb 2023 – Present

- Lead of a five-member team, overseeing research, planning, and execution while facilitating communication between product development and research teams
- Conducted research and productionized proprietary automatic prompt optimization leading to a accuracy improvements of 10%-50% on datasets including GSM8, Orca Math, Neural RAG, HOTPOT QA, HellaSwag and SQuAD
- Led the research, metrics implementation and product design for Galileo's Semantic Segmentation project

Richard Zemel's Research Group **New York, NY**
Researcher May 2022 – Present

- Member of 10+ person computer vision research group led by Richard Zemel integrating teams from Columbia University and the University of Toronto
- Generated research ideas and led code development on two projects focused on self-supervised ego-centric video learning and visual attribute learning for composable representations

Deloitte Consulting **New York, NY**
Business Analyst – Strategy & Analytics Oct 2020 – Jul 2021

- Created and designed relevant operational analytics for healthcare provider leading to increased financial, and operational transparency cutting costs by >$3 Million
- Built a hospital capacity modeling simulation focusing on patient-agent decision making

Education & Activities

Columbia University **New York, NY**
M.S Computer Science (Advanced Research Specialization – Machine Learning) Aug 2022 – Dec 2023

- GPA: 3.95 / 4.00
- Coursework: Self-Supervised Learning, Computer Vision, Natural Language Processing, Deep Learning
- Research: Self-Supervision within Computer Vision, Using Codex to correctly solve STEM classes

Boston College **Chestnut Hill, MA**
Bachelor of Science in Management (Computer Science & Business Analytics) Aug 2016 – May 2020

- GPA: 3.86 / 4.00 – Magna Cum Laude
- Men's Varsity Tennis Captain for Junior and Senior Seasons
- 2019 All-ACC Team, 2019 ACC All-Academic Team, 2019 Boston College Scholar Athlete Of The Year, 2020 Academic Advisors Award for Excellence (Graduating student athlete with highest GPA)

Projects, Publications & Technical Skills

Computer Vision Enabled Basketball Analytics (link to publication)

- Utilized semi-supervised labeling, Video MAE, and various CUDA optimizations to simulate advanced analytic capabilities like shot prediction, shot charting and shot quality in near real time
- Data loader optimizations led to 50% decrease in training time
- Encoder optimizations led to 25% decrease in FLOPs and wall time at inference allowing for real time stats

Reinforcement Learning Poker (link to publication)

- Constructed a competitive self-play framework utilizing the Proximal Policy Optimization algorithm and the Monte Carlo Reinforce algorithm to learn optimal heads-up poker strategy

Technical Skills

- **Programming Languages:** Python, CUDA, C, C++, Java, R, Swift, and SQL
- **Frameworks / Tools:** JAX, PyTorch, CUDA, DeepSpeed