Derek Austin

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Education

Columbia University – New York, NY Aug 2021 – Dec 2022
Master of Science in Computer Science (Concentration in Machine Learning/Research)

- 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 Aug 2016 – May 2020
Bachelor of Science in Management (Concentration in Computer Science & Business Analytics)

- GPA: 3.86 / 4.00 – Magna Cum Laude
- Relevant Coursework: Machine Learning, Machine Learning for Business, Predictive Analytics

Experience

Richard Zemel's Research Group **New York, NY**
Research Assistant 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 ideas and led code development on two projects focused on self-supervised ego-centric video learning and self-supervised/semi-supervised attribute learning for composable representations

Deloitte Consulting **New York, NY**
Business Analyst – Strategy & Analytics – Solutions Engineer 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
- Led communication between 4-member team and 40-member client team
- Built a hospital capacity modeling simulation focusing on patient-agent decision making

Deloitte Consulting **Boston, MA**
Business Analyst Intern – Strategy & Analytics Jun 2019 – Aug 2019

- Implemented an ERP system for a large healthcare provider on a 5 person team, gaining key insights into how ERP systems help to inform strategic decisions in healthcare

Projects and Publications

Solving STEM Classes with Large Language Models

- Published conference paper at AIED focusing on using OpenAI's Codex (code generating model) to solve Probability and Statistics Courses (https://link.springer.com/chapter/10.1007/978-3-031-11647-6_127)
- Published paper under review for conference publication focusing on solving MIT's Machine Learning final exams with Codex and publishing the curated dataset for future research (https://arxiv.org/abs/2206.05442)

Reinforcement Learning Poker

- Constructed a competitive self-play framework utilizing the Proximal Policy Optimization algorithm and the Monte Carlo Reinforce algorithm to learn optimal poker strategy
- Coding was done in Python using Keras and self-made packages to simulate a poker environment

PupLab – CNN iOS App

- Creator of the iOS app *Publab* that utilizes a convolutional neural network to take a user's picture and output what dog breed users look most like

Activities

Boston College Men's Varsity Tennis Captain Aug 2016 – Mar 2020

- 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)

Technical Skills

- **Languages:** Python, C, C++, Java, R, Swift, Solidity and SQL
- **Frameworks:** PyTorch,TensorFlow, Keras, scikit learn, Matplotlib, Github, CUDA, Jupyter, Pandas