Nathan Ma

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EDUCATION

University of Illinois at Urbana-Champaign Champaign, IL

Bachelor of Science in Computer Science *Aug. 2023 - May 2027*

Cumulative GPA: 4.0/4.0, James Scholar

Relevant Coursework: Data Structures, Linear Algebra, Computer Architecture, Algorithms & Models of Computation, Statistical Modeling, Machine Learning

EXPERIENCE

Course Assistant (STAT 400) Aug 2024 – Current

University of Illinois at Urbana-Champaign *Champaign, IL*

- Lead weekly office hours and grade homework/exams in topics in statistics and probability (10 hours weekly)
- Revise existing problem sets and create new problems to make homework informative and engaging

Software Engineer Intern May 2024 – Aug. 2024

AbbVie Inc. *Mettawa, IL*

- Developed neural network models predicting psoriatic arthritis risk with Python's TensorFlow/Keras libraries, improving upon baseline error rate by 24%
- Used Python's Flask and Plotly libraries with HTML/CSS/JS to create a data visualization app; implemented by the real world evidence team to analyze and understand clinical trial data

Web Designer/Developer June 2023 – Aug. 2023

- Designed front end display with Wordpress and back end admin systems with PHP for electric transport company

Data Science Intern June 2022 – July 2022

AbbVie Inc. *Mettawa, IL*

- Used company's licensed app to mine through a healthcare claims database with 250 million patients and 20 billion service records
- Conducted case-control analysis with propensity score matching to assess overall burden and cost among multiple disease areas
- Validated results against the company's in-development internal data platform, part of a multi-million dollar cost-cutting initiative

PROJECTS

SPIMBot May 2024

- Tournament-style final project for computer architecture class, worked in team of three, coded in MIPS assembly
- Programmed bot's movement algorithm and designed bot's shooting algorithm to navigate map and claim tiles
- Finished third out of 67 total teams

Weighted Bipartite Link Prediction June 2022 – Oct. 2022

- Worked under mentorship of Professor Zhiliang Xu at University of Notre Dame on topic of link prediction
- Algorithm identified and filled missing edges with prediction potential, using Python's networkx library
- Results published in peer reviewed journal Ma, N. *IJASCA* 2022;13(12):1-5

AWARDS AND HONORS

USACO Gold Division Dec. 2022

- Implemented solutions to challenging algorithm-based questions in Java and C++

2x MathWorks Math Modeling (M3) Challenge Finalist Apr. 2022, Apr. 2023

- Top 6 ($5,000 prize) out of nearly 800 participating teams in US and UK
- Used MATLAB and Python to model the impact of remote work (2022) and ebike growth (2023)

TECHNICAL SKILLS

Languages: Java, Python, C/C++, MATLAB, SQL, HTML, CSS, JavaScript, R
Frameworks: Flask, TensorFlow, Keras, PyTorch, React
Developer Tools: Git, Docker, Visual Studio Code, PyCharm, Eclipse