Cooper Stevens

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Languages: English, Spanish | Current Security Clearances: **Top Secret** & **SAP**

Objective

My objective is to utilize my educational background from the University of Michigan (UMich) and my technical experience to find and promote solutions in Artificial Intelligence (AI) and Machine Learning (ML). I am a great fit for a technical position in developing, improving, and/or deploying AI systems due to my depth of educational experience in AI and ML, my many research activities studying AI and ML techniques, and my 3years technical experience in industry.

Work Experience

Software Engineer | Northrop Grumman (Aeronautics Systems) | Oklahoma City, OK — November 2023 – Present

- ✓ **Design and implement** (Python) **automated test procedures** to verify robust functionality of safety-critical system requirements.
- ✓ **Analyze source code** (C++) for insufficiencies/inaccuracies **and advise on fixes** to implementation.
- ✓ **Discovered, documented, and devised solutions to** 12+ **system issues**, oft discovered **via rigorous testing**.
- ✓ **Regularly commended** by various levels of technical superiors and management **for my precision, rigor, and ability to explain** in discovering and documenting system and requirements issues. See a **formal commendation** here.
- ✓ **Design, implement, and troubleshoot** safety-critical system **requirements**.
- ✓ **Consistently** maintain **#1-performer** status in my organization with a **velocity ~2.5× the median** for robustness testing work completed **throughout 2024** and into 2025.

Technical Marketing Intern | KLA Corporation | Ann Arbor, MI — May 2022 – April 2023

- ✓ **Design and implement** software (Python) for **computer vision** projects **utilizing machine learning, surface rendering, and surface simulation** for optical microscopes.
- ✓ **Advise on porting** my Python implementation **to C++** for product-level code.
- ✓ Thoroughly test and fine-tune my algorithm's parameters for **optimal performance**.
- ✓ **Present** algorithm and results **to various levels of management**; received **very positive feedback**, resulting in my 3-month-long internship being extended to 1 year.
- ✓ The inclusion of my algorithms **made** KLA's optical microscope **product viable against competitors**.
- ✓ Develop **dynamic programming solution with at least 85% speedup** over existing solution: asymptotic runtime $\Theta(n^4) \rightarrow \Theta(n^2)$
- ✓ Develop structure detection algorithm with a **10× greater yield over existing solution**.

Software Engineer Intern | Harman International | Novi, MI — May 2021 – August 2021

- ✓ Help Harman's Uconnect voice recognition team with multiple tasks.
- ✓ Make an **automated testing suite** (Python) to test Cerence Inc.'s voice recognition updates.
- ✓ Troubleshoot and upload test reports for various programs and tests.

Instructional Aide | University of Michigan | Ann Arbor, MI — December 2020 – April 2022
Graduate Student Instructor | University of Michigan | Ann Arbor, MI — August 2022 – April 2023

- ✓ Grade and create students' homework and exams, help students with course material, hold office hours for the students, and **teach new material** in a weekly discussion.
- ✓ Assist the professors with administrative aspects of the course like designing course content, scheduling, and designing rubrics.
- ✓ **Commended** by staff, coworkers, and students **for my precision, clarity, and knowledge** in instruction.

Tutor at the Math Lab & MATH 217 Kiluk Tutor | University of Michigan | Ann Arbor, MI — August 2020 – December 2021

- ✓ Work with students to help them through course work for a variety of courses. These courses include the full calculus sequence, several linear algebra courses, and more. Tutors are proficient in every MATH course numbered less than 218.

Sales Representative | Cutco & Vector Marketing | Warren, MI — February 2019 – April 2020

- ✓ Meet with prospective clients to **demonstrate and inform** on Cutco's high-end kitchenware.
- ✓ **Offer expertise** about the uses, manufacturing, and care of the products for my customers.
- ✓ After any sale or demonstration, **remain a point of contact for support** for their owned products, **and for pricing and advising** on products to add to their collection.
- ✓ **Continue to support** my dozen+ Cutco customers to the present day (most recent sale in February 2025).

Certifications and Clearances

- · Secret Security Clearance
- · Interim Top Secret Security Clearance
- · Special Access Program Clearance
- · Artificial Intelligence Certification from UMich

Research Experience

Algorithmic Fairness in Machine Learning – Undergraduate Thesis   Winter 2022 Semester
· Advised by Dr. Martin Strauss and Dr. H. V. Jagadish, the topic of study is **algorithmic fairness** in predicting recidivism **using machine learning**. This thesis earned the **Honors distinction** on my degree: *Fairness, Transparency, and Interpretability in Predicting Recidivism*.

Bayesian Fairness   September 2022 – January 2023
· Advised by Dr. Sindhu Kutty, the topic of study is promoting fairness by designing decision makers that **factor fairness into the objective function** and **learn in a Bayesian fashion**, even under high uncertainty.

Improving Explainability of NLP Models via Counterfactual Examples   Winter 2023 Semester
· Formed a research team to extend **Generative Adversarial Network** (GAN) methods to generate counterfactual examples pertaining to a **Natural Language Processing** (NLP) model: *Transformer-based Disentanglement of Natural Language for Counterfactual Explainability*.

Song Genre Classification Using Pitch Data   Fall 2021 Semester
· Ran a research team with a goal of extending **Natural Language Processing** methods, including **recurrent neural networks** (RNN) with **long-short term memory** (LSTM), to music with a case study of genre classification: *Song Genre Classification Using Pitch Data*.

Sequentializing Graph Representations for Machine Learning   Fall 2022 Semester
· Formed a research team focused on **improving performance** of compiler-based **graph representations** using **LSTM-based models**, requiring graph sequentialization: *Sequentializing Compiler-Based Graph Representations of Code for Machine Learning*.

Personal Projects

Real-time Stock Market Buy/Sell Notifications and Automated Investments   April 2024 – Present
· **Stream real-time stock market data** and calculate various metrics, sending buy/sell notifications and simulating automated buys/sales. Software is **hosted and automated on** an **AWS EC2** server. **Currently in a trial period** with the Ameriprise Financial branch in Farmington Hills, MI; portfolio managers provide **feedback for potential updates** and assess if they will subscribe; GitHub link.
· **Receiving excellent commendatory feedback**: from the Branch Manager, "*It's straight forward and simple, easy to read and very useful.*"

Education

M.S. in Computer Science | August 2022 – April 2023   University of Michigan – Ann Arbor, MI
- 4.0 Grade Point Average

B.S. in Mathematical Sciences and Computer Science | August 2019 – April 2022   University of Michigan – Ann Arbor, MI
- 4.0 Grade Point Average (degree awarded with **Highest Distinction**)
- Major Mathematical Sciences with a focus in **Discrete and Algorithmic Methods**
- Major Computer Science **with Honors** and with a focus in **Artificial Intelligence** (AI Certification)

Academic Awards from the University of Michigan – Ann Arbor, MI
· EECS Scholar 2021 (Comp. Sci. Senior with greater than 3.9 GPA)
· James B. Angell Scholar (all A's or A+'s during undergraduate career)
· William J. Branstrom Freshman Prize (top 5% of class)
· UMich University Honors for undergraduates (2019-2022)

International Baccalaureate (IB) Diploma | August 2017 – May 2019   International Academy of Macomb – Clinton Twp., MI

Technical Skills

· Parallel Computing (MPI, OpenMP, Cuda)
· Privacy Enhancing Technologies (cryptography, federated learning, etc.)
· Introduction to (graph, stochastic, etc.) Algorithms
· Mathematical Foundations of Machine Learning (Python, Jupiter, Colab)
· Artificial Intelligence, Machine Learning (Python)
· Amazon Web Services (AWS)
· Data Structures & Algorithms (C++)
· Natural Language Processing (Python)
· Computer Organization (C, assembly)
· Advanced Compilers (LLVM, C, C++)
· Probability and Statistics Theory
· Combinatorics and Graph Theory

Soft Skills

· Leadership
· Organization
· Time management
· Ability to instruct/teach
· Teamwork
· Adaptability
· Salesmanship
· Clarity of explanation
· Customer service
· Self-motivation
· Attention to detail
· Independence

Non-Academic Awards and Activities

· Oklahoma City Memorial Half Marathon (April 2025)
· Founder & President of Michigan Pickleball Club (2022-2023)
· UMich Intramural Athlete of the Year (2020-2021)
· University of Michigan Men's Rowing (2019-2020)