Chandler Smith

Washington, DC | 207-400-6587 | smith.18.chandler@gmail.com | https://github.com/chansmi

EDUCATION

Master of Science, Computer Science **Expected December 2023**
Northeastern University, Khoury College of Computer Sciences, Boston, MA GPA: 3.93
Related Courses: Master's Thesis: Technical AI Safety, Machine Learning, Computer Vision, Database Management Systems, Algorithms, Object Oriented Design, Data structures, Web Development

Center for ML Safety: Intro to Machine Learning Safety **April 2023**
Related Courses: Hazard Analysis, Robustness, Monitoring, Alignment, Systemic Safety, Existential Risk Discussion

Bachelor of Arts, Social Justice (Independent Major) **May 2018**
Colby College, Waterville, ME
Minor: Chemistry
Related Courses: Moral Philosophy, Statistics, Social Psychology, A Strategic Understanding Complex Organizations

TECHNICAL SKILLS

Languages: Python, C++, Java, R, SQL, JavaScript
Proficient Subject Matter: Generative AI: Transformers, GANs, VAEs, NeRFs, Deep Learning
Additional Technologies: Git, Sklearn, Pandas, OpenCV, Pytorch, Kubernetes, React, Django, R.Studio

WORK EXPERIENCE

Machine Learning Alignment Research Scholar, Berkeley, CA **January 2023 – Present**
Alignment Theory Scholar - Cooperative AI
- Designed and led multi-agent research project investigating the game theoretic behavior of language models in multi-agent systems.
- Built and deployed advanced generative AI assessment models using PyTorch and Weights & Biases.
- Designed advanced prompt and various iterations of prompt engineering.

In-Q-Tel – Enterprise Technologies, Washington, DC **June 2023 – Present**
Technical Architect Fellow
- Provided technical expertise on the generative AI core deal team, closing 5 high-impact investments in support of national security missions
- Developed forward-looking reference architectures articulating how emergent technologies in generative AI and enterprise infrastructure can be transformative to our partners in the intelligence community
- Conducted rigorous technical due diligence on 20+ early and growth-stage companies, evaluating technical capabilities, product roadmaps and engineering talent.
- Authored 11 comprehensive 'Company of Interest' reports, detailing organizational technologies

Dimagi - United States Health, Cambridge, MA **September 2020 – May 2023**
Applications Engineer May 2022 – May 2023
- Collaborated with leadership to design and implement a divisional performance OKR; assessed and improve the current state of site performance monitoring for our web application platform, CommCare
- Designed improvements and analyzed proposed value for 12 platform level features
- Served as the Solutions Architect for 9 divisional projects; receive technical requests, research feasibility, generate product specs, and propose implementation options

Support Lead July 2021 – May 2022
- Managed technical support desk responsible for assisting over 20,000 contact tracers responding to COVID-19
- Created and executed 3-5 quarterly OKRs to achieve cross-divisional goals
- Led the USH Support team in the implementation and strategy of supporting 8 key partners

Senior Support Analyst November 2020 – July 2021
- Coordinated emergency tech response for over 28 critical failure issues
- Prioritized 100+ product features, enhancements, and bug fixes with the tech team

Support Analyst May 2020 – November 2020
- Designed and documented 20+ support and implementation processes
- Performed advanced troubleshooting on site reliability and bug investigation for over 600 issues

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RESEARCH

Master's Thesis Project - Northeastern University **May 2023 – December 2023**

- Conducted a Master's thesis in Multi-Agent AI Safety, applying adversarial multi-agent training techniques to demonstrate misaligned behavior if deployed in a military or global conflict scenario.
- Developed and documented research in MARL, focusing on mixed-motive coordination games, and provided a detailed analysis with implications for AI use in complex, security-sensitive environments.

Independent Research **October 2023 – December 2023**

- EscalAtion: Assessing Multi-Agent Risks in Military Contexts
- Core team member for research on autonomous agents' behaviors in military simulations using AI models like GPT-4, creating a framework to assess escalation potential and conflict dynamics.
- Evaluated off-the-shelf AI models, uncovering tendencies for escalation and risky dynamics in simulated high-stakes scenarios, emphasizing the need for cautious deployment in military and policy contexts.

Institute for Experiential AI - Northeastern University, Portland, ME **August 2022 – January 2023**

Graduate Research Associate, Energy and Natural Resource lead researcher

- Collaborated with key industry partners to survey emerging AI and Machine Learning commercial technologies and synthesize key research data
- Wrote Energy and Natural Resource report with accompanying case studies which identified high impact and proprietary Machine Learning technology

PROJECTS

Camera Calibration and Augmented Reality – Computer Vision:

- Designed a program using OpenCV that can detect a target object and project its 3D orientation axis in relation to the specific camera that is reading the object
- Implemented the ability for the program to place a custom virtual object in the scene relative to the target that moves and orients itself correctly given motion of the camera or target

Adversarial Robustness – Machine Learning Safety

- Implemented a robustness program to mitigate the following adversaries in computer vision tasks:
    1. Untargeted Fast Gradient Sign Method
    2. Targeted Fast Gradient Sign Method
    3. Projected Gradient Descent Method
- Provide direct comparison and analysis between adversarially trained models and normally trained CV models.

Real-time 2-D Object Recognition – Computer Vision:

- Created real time 2-D object recognition program that correctly identifies a specified set of objects
- Utilizing a series of object recognition techniques; thresholding, morphological filtering, segmentation, and feature identification, the object detection program accounts for translation, scale, and rotation from a camera looking straight down

Online Book Club Web Application – Software Engineering:

- Designed and implemented an online book club management web application that allowed users to: review and discuss book recommendations, manage and maintain private book clubs, and write custom book ratings available to their specific group
- Books, Groups, and content was deployed via Heroku and maintained by MongoDB

HONORS AND AWARDS

Alignment Jams Hackathon Winner - EscalAtion: Assessing Multi-Agent Risks in Military Contexts
Jen Harlow Memorial Award for Team Impact at Dimagi
Donald P. Lake Award for Leadership, Academic Accomplishment and, Athletic Ability

PROFESSIONAL DEVELOPMENT AND AFFILIATIONS

- Center for AI Safety: Intro to Machine Learning Safety
- Effective Altruism Local, Washington, DC
- PERLS Reading Group: Political Economy of Reinforcement Learning Systems
- MARS
- **Conferences**:
    - NeurIPS '23
    - SERI – Stanford Existential Risk Conference '23
    - Effective Altruism London '23, Global 24'