# Chandler Smith

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## 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

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|---|---|
| **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
- **Conference**s:
    - NeurIPS '23
    - SERI – Stanford Existential Risk Conference '23
    - Effective Altruism London '23, Global 24'