Ritwik Gupta

PERSONAL INFORMATION

Email: ritwikg2004@live.com
Web: `https://ritwikgupta.me`
Citizenship: United States
Clearance: TS/SCI (Active; DCID 6/4 Eligibility granted 2018-11-02 based on T5 Investigation closed 2018-04-25)

EDUCATION

University of California, Berkeley Aug 2021 - present
Berkeley, CA
Ph.D., Artificial Intelligence/Computer Vision

- Designated Emphasis in Development Engineering
- Graduate Certificate in Security Policy (Jan 2023)

University of California, Berkeley Dec 2023
Berkeley, CA
M.S., Computer Science

University of Pittsburgh Aug 2014 - Apr 2017
Pittsburgh, PA
B.S., Computer Science

- GPA: 3.67/4.00 (*Magna Cum Laude*)

EXPERIENCE

Advisor, AI and AI Policy Apr 2023 - Present
Department of Justice
Washington, D.C.

- Lead advisor to the FBI's Director and Executive Assistant Director for Science and Technology. Guided the FBI on the responsible and proactive use of AI both inside the FBI for investigative and intelligence work, as well as the potential threat vectors of AI as used by adversaries.
- Led the creation of the FBI's AI Task Force, a cross-branch team in charge of creating the proper infrastructure and organizational mechanisms to support AI across all missions.
- Steered the FBI's intelligence teams towards pressing threats faced by the United States by the application of AI in various domains. Authored threat intelligence reports on AI, semiconductors, and space that were briefed to the President of the United States.

Technical Director, Autonomy Aug 2022 - Present
Defense Innovation Unit
Mountain View, CA

- Technical lead for the DoD's Replicator initiative. Created the system architecture and data requirements for collaborate autonomously across thousands of UxS in denied, disrupted, intermittent, and limited impact environments.
- Leading the technical strategy for the Autonomy portfolio, working closely with internal and external partners to evaluate innovative technologies in the areas of unmanned systems and AI/ML.
- Providing technical diligence and evaluation of proposals to ensure alignment with portfolio goals and objectives, resulting in recommendations on deployment of DoD funds.

Research Fellow May 2022 - Aug 2022

Allen Institute for AI

Seattle, WA

- Developed new techniques and datasets to create geospatial foundation models. The resulting work, SatlasPretrain, was accepted to ICCV for an oral.
- Researching physics-informed methods to model synthetic aperture radar imagery.
- Providing the PRIOR team with subject matter expertise on remote sensing and machine learning on geospatial imagery.
- Awarded the Common Good Award at the AI2 hackathon for work on automated damage assessment for wildfires.

Principal AI Scientist Jun 2021 - Aug 2022

Defense Innovation Unit

Mountain View, CA

- Conducting research into efficient machine learning on satellites for climate applications.
- Deployed research on dark vessel detection and automated building damage assessment into the field for use in the Russo-Ukrainian War.
- Led the development of international research collaborations focused on AI for climate change and social good.
- Providing technical diligence for new and in-progress projects across multiple DIU portfolios, ensuring that programs are technically sound, solving real user problems, and that commercial vendor pitches have merit.

Engineering Program Manager Jan 2021 - Jun 2021

Apple

Cupertino, CA

- Led the development of real-time machine learning for the Apple Vision Pro.
- Assisted in the deveopment of ARKitCore and real-time alpha matting pipelines.
- Collaborated with teams across Apple, often with incompatible requirements and timeline, to deliver integrated machine learning algorithms on time with limited resources.

Technical Program Manager Jan 2020 - Jan 2021

Defense Innovation Unit

Mountain View, CA

- Planning and executing multi-stakeholder programs across the entire acquisitions and software development lifecycles.
- Build and grow international partnerships and technical exchanges in the area of artificial intelligence for humanitarian assistance and disaster response.
- Created a comprehensive test and evaluation strategy for AI/ML projects.

Machine Learning Research Scientist June 2017 - Jan 2021

Carnegie Mellon University Software Engineering Institute

Pittsburgh, PA + Mountain View, CA

- Principal investigator exploring the applications of computer vision and robotics for humanitarian assistance and disaster response (HADR).
- Led the development of xView2, the first and largest effort of its kind to assess building damage from satellite imagery after natural disasters, establishing a new standard for disaster recovery operations and being adopted internationally by over a hundred agencies.

- Created large-scale international collaborations to transition HADR research with the United Nations, FEMA, and various government partners.
- Established CMU's cross-campus Humanitarian Assistance and Disaster Response Initiative.
- Developed off-road perception and anomaly detection algorithms for use in network-denied environments.
- Secured over $5,000,000 in sponsored research dollars from government funding agencies, demonstrating strong grant-writing and project management skills
- Mentored a diverse team of junior researchers and engineers, helping them to develop their skills and knowledge in the field of AI and software engineering and preparing them for leadership roles in the industry

Software Engineer Nov 2016 - Apr 2017

UPMC Enterprises
Pittsburgh, PA

- Created a data coherency platform to provide high-fidelity, real-time admit, discharge, transfer (ADT) feed metrics across all hospitals in the UPMC Health System. I developed the first complete state matrix for legacy ADT messages in the UPMC Health System.
- Led UPMC Enterprise's submission to the IBM Watson AI XPrize for multi-modal memory systems for Alzheimer's patients.

Data Science Intern May 2016 - Aug 2016

Apple
Cupertino, CA

- Applied Machine Learning team. Developed deep learning algorithms that provided Apple executives with real-time reactions to product launches from global social media feeds.
- My work assisted executives shape their presentations for Apple product launches live on stage.

Data Science Intern May 2015 - Aug 2015

Staples SparX
San Mateo, CA

- Built recommender systems for Staples, the world's 2nd largest e-commerce retailer. Created models that were put into production on Staples.com and emails, outperforming existing models.
- Developed semantic relationships between disjoint item descriptions to gain deeper insights into product relationships.
- Worked with Apache Spark, Hadoop, Mesos, YARN, and Python.

Full-Stack/Mobile Developer Jan 2015 - Sept 2016

Department of Chemistry,
University of Pittsburgh
Pittsburgh, PA

- Built the Pitt Quantum Repository, a web platform for molecular visualizations and data. PQR is currently in use by Pitt's general chemistry and biology classes.
- Application stack of Flask, Bootstrap, LESS, JavaScript, HTML, and Grunt.

Android Developer June 2014 - present

Rectangle
Pittsburgh, PA

- Created PAT Track, an Android application to track the public buses of Pittsburgh in real-time. The app has over 35,000 users and is the one of the most popular bus tracking apps in the region.

Data Science Intern June 2014 - Sept 2014
Department of Biomedical Informatics,
University of Pittsburgh,
Pittsburgh, PA

- Developed machine learning algorithms to categorize driver and passenger mutations given whole-genome data across various types of cancer.
- Worked with Python, Theano, Nvidia CUDA, and Scikit.

Research Intern June 2013 - Sept 2013
Department of Biomedical Informatics,
University of Pittsburgh,
Pittsburgh, PA

- Analyzing the frequency and distribution of palindromes in the entire human genome, with focus on acute myeloid leukemia. Developed tools in Java, Python, HTML, JavaScript, and D3.

FELLOWSHIPS

Fellow Aug 2023 - Dec 2023
Berkeley AI Policy Hub
Berkeley, CA

Graduate Fellow Jun 2023 - present
Berkeley Human Rights Center
Berkeley, CA

Research Fellow Apr 2023 - present
Berkeley Risk and Security Lab
Berkeley, CA

AI Policy Fellow Jan 2022 - present
Center for Security in Politics
Berkeley, CA

AFFILIATIONS

Affiliate Aug 2021 - Aug 2022
Berkeley Lab
Berkeley, CA

Affiliated Researcher May 2019 - Jan 2021
Carnegie Mellon University CyLab
Pittsburgh, PA

Affiliated Researcher Dec 2017 - Jan 2021
Carnegie Mellon University Robotics Institute
Pittsburgh, PA

MACHINE LEARNING PUBLICATIONS

- Tsung-Han Wu, Giscard Biamby, Jerome Quenum, **Ritwik Gupta**, Joseph E Gonzalez, Trevor Darrell, David M Chan. "Visual Haystacks: Answering Harder Questions About Sets of Images". 2020. *In review*.
- **Ritwik Gupta***, Shufan Li, Tyler Zhu, Jitendra Malik, Trevor Darrell, Karttikeya Mangalam. "xT: Nested Tokenization for Larger Context in Large Images." 2024. *International Conference on Machine Learning (**ICML**) 2024*.
- Tsung-Han Wu, Giscard Biamby, David Chan, Lisa Dunlap, **Ritwik Gupta**, Xudong Wang, Joseph E. Gonzalez, Trevor Darrell. "See, Say, and Segment: Teaching LMMs to Overcome False Premises". 2024. *IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**) 2024*.
- Sungduk Yu, Walter M. Hannah, Liran Peng, Mohamed Aziz Bhouri, **Ritwik Gupta**, ..., Michael S. Pritchard. "ClimSim: An open large-scale dataset for training high-resolution physics emulators in hybrid multi-scale climate simulators". 2023. *Neural Information Processing Systems (**NeurIPS**) 2023*. **Best paper award**.
- **Ritwik Gupta**, Colorado J. Reed, Shufan Li, Sarah Brockman, Christopher Funk, Brian Clipp, Kurt Keutzer, Salvatore Candido, Matt Uyttendaele, Trevor Darrell. "Scale-MAE: A Scale-Aware Masked Autoencoder for Multiscale Geospatial Representation Learning." 2022. *International Conference on Computer Vision (**ICCV**) 2023*. **Nominated for Best Paper**.
- Bastani, F., Wolters, P., **Gupta, R.**, Ferdinando, J., Kembhavi, A. "Satlas: A Large-Scale, Multi-Task Dataset for Remote Sensing Image Understanding." 2022. *International Conference on Computer Vision (**ICCV**) 2023*.
- **Ritwik Gupta***, Fernando Paolo*, Tsu-ting Tim Lin*, Bryce Goodman, Nirav Patel, Daniel Kuster, David Kroodsma, Jared Dunnmon. "xView3-SAR: Detecting Dark Fishing Activity Using Synthetic Aperture Radar Imagery." 2022. Advances in Neural Information Processing Systems 35 (**NeurIPS** 2022).
- Malachy Moran, Kayla Woputz, Derrick Hee, Manuela Girotto, Paolo D'Odorico, **Ritwik Gupta**, Daniel Feldman, Puya Vahabi, Alberto Todeschini, Colorado J Reed. "Snowpack Estimation in Key Mountainous Water Basins from Openly-Available, Multimodal Data Sources." 2022. CVPR 2022 Workshop on Multimodal Learning for Earth and Environment.
- Michael Laielli, Giscard Biamby, Dian Chen, **Ritwik Gupta**, Adam Loeffler, Phat Dat Nguyen, Ross Luo, Trevor Darrell, Sayna Ebrahimi. "Region-level Active Detector Learning." 2022. arXiv preprint. arXiv:2108.09186.
- Rupa Kurinchi-Vendhan, Björn Lütjens, **Ritwik Gupta**, Lucien Werner, Dava Newman. "WiSoSuper: Benchmarking Super-Resolution Methods on Wind and Solar Data." 2021. Tackling Climate Change with Machine Learning Workshop at NeurIPS 2021.
- **Ritwik Gupta**, Richard Hosfelt, Sandra Sajeev, Nirav Patel, Bryce Goodman, Jigar Doshi, Eric Heim, Howie Choset, Matthew Gaston. "xBD: A Dataset for Assessing Building Damage from Satellite Imagery." 2020. arXiv preprint. arXiv:1911.09296.

- **Ritwik Gupta**, Bryce Goodman, Nirav Patel, Ricky Hosfelt, Sandra Sajeev, Eric Heim, Jigar Doshi, Keane Lucas, Howie Choset, Matthew Gaston. "Creating xBD: A Dataset for Assessing Building Damage from Satellite Imagery." 2019. Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition Workshops (CVPRW). 10-17.
- Zachary Kurtz, **Ritwik Gupta**, Eliezer Kanal, Matthew Gaston. "Mathematical Definition of Robustness for Machine Learning Algorithms." 2018. Workshop on Defensive Deception and Trust in Autonomy, Naval Applications of Machine Learning.
- **Ritwik Gupta**, Zachary T. Kurtz, Sebastian Scherer, Jonathon M. Smereka. "Open Problems in Robotic Anomaly Detection." 2018. arXiv preprint. arXiv:1809.03565.
- **Ritwik Gupta**, Carson D. Sestili, Javier A. Vazquez-Trejo, Matthew E. Gaston. "Focusing on the Big Picture: Insights into an End-to-End Systems Approach to Deep Learning for Satellite Imagery." 2018. 2018 IEEE International Conference on Big Data (Big Data), 1931-1936.
- Geoff Hutchison, **Ritwik Gupta**, Josh Rogan., J.J. Naughton, Daniel Lambrecht. "Pitt Quantum Repository: An Enrichment Tool to Improve Learning." 2016. Pittsburgh Quantum Institute 2016. Poster.
- **Ritwik Gupta***, Sophia Cheng*, Tonya Hammond*, Lavanya C. Viswanathan, Madhavi K. Ganapathiraju. "Distribution of Palindromes in the Human Genome." Journal of Pathology Informatics. March 28, 2014. J Pathol Inform 2014, 1:12.

Policy Publications

- **Ritwik Gupta**, Leah Walker, Andrew Reddie. "Whack-a-Chip: The Futility of Hardware-Centric Export Controls". 2024. BRSL Tech Report
- **Ritwik Gupta**, Leah Walker, Rodolfo Corona, Stephanie Fu, Suzanne Petryk, Janet Napolitano, Trevor Darrell, Andrew W. Reddie. "Data-Centric AI Governance: Addressing the Limitations of Model-Focused Policies". 2024. *In review*.
- **Ritwik Gupta**, Leah Walker, Eli Glickman, Raine Koizumi, Sarthak Bhatnagar, Andrew Reddie. "Open-Source Assessments of AI Capabilities: The Proliferation of AI Analysis Tools, Replicating Competitor Models, and the Zhousidun Dataset". 2024. BRSL Tech Report.
- Sarthak Bhatnagar, Eli Glickman, Bethany Goldblum, **Ritwik Gupta**, Kaitlyn Lenkeit, Jane Darby Menton, Andrew Neciuk, Andrew Reddie, Vishwaa Sofat, Leah Walker. "Russian Nuclear ASAT Weapons: The Fallout". 2024. Lawfare.
- **Ritwik Gupta**. "LAION and the Challenges of Preventing AI-Generated CSAM". 2024. Tech Policy Press.
- **Ritwik Gupta** and Andrew Reddie. "Proliferate, Don't Obliterate: How Responsive Launch Marginalizes Anti-Satellite Capabilities". 2023. War on the Rocks.
- **Ritwik Gupta** and Andrew Reddie. "Accelerating the Evolution of AI Export Controls". 2023. Tech Policy Press.
- **Ritwik Gupta**, Alexander Bayen, Sarah Rohrschneider, Adrienne Fulk, Andrew Reddie, Sanjit A. Seshia, Shankar Sastry, Janet Napolitano. "Emerging Technology and Policy Co-Design Considerations for the Safe and Transparent Use of Small Unmanned Aerial Systems." 2022. Center for Security in Politics.

- Ettinger, J., Galyardt, A., **Gupta, R.**, DeCapria, D., Kanal, E., Klinedinst, D., Shick, D., Perl, S., Dobson, G., Sanders, G., Costa, D., Rogers, L. "Cyber Intelligence Tradecraft Report: The State of Cyber Intelligence Practices in the United States." 2019. Software Engineering Institute Technical Report.

BOOK CHAPTERS

- **Ritwik Gupta**. "Emerging Technologies and their Impact on HADR". Disasters and Humanitarian Action, edited by Alistair D.B. Cook. S Rajaratnam School of International Studies, Nanyang Technological University. 2024.

PROFESSIONAL ACTIVITIES

Chair:

- Workshop on Computer Vision for Earth Observation Workshop Series. WACV 2025.
- Human Alignment in AI Decision-Making Systems. IEEE CAI 2025.
- First Symposium on Artificial Intelligence, Public Policy, and National Security. Berkeley AI Research. 2024.
- Workshop on Machine Learning for Earth System Modeling. ICML 2024.
- Workshop on Complex-Valued Deep Learning and the SARFish Challenge. WACV 2024.
- Sixth Workshop on Artificial Intelligence for Humanitarian Assistance and Disaster Response. NeurIPS 2023.
- Fifth Workshop on Artificial Intelligence for Humanitarian Assistance and Disaster Response. ICCV 2023.
- State of the Space Industrial Base 2023.
- Fourth Workshop on Artificial Intelligence for Humanitarian Assistance and Disaster Response. NeurIPS 2022.
- Third Workshop on Artificial Intelligence for Humanitarian Assistance and Disaster Response. NeurIPS 2021.
- Second Workshop on Artificial Intelligence for Humanitarian Assistance and Disaster Response. NeurIPS 2020.
- Artificial Intelligence for Data Discovery and Reuse Symposium. Open Science Symposium 2020.
- Software-Hardware Codesign for Machine Learning Workloads Workshop. MLSys 2020.
- Artificial Intelligence for Humanitarian Assistance and Disaster Response Workshop. NeurIPS 2019.

Reviewer:

- IEEE Transactions on Geoscience and Remote Sensing
- Conference on Computer Vision and Pattern Recognition 2025
- Nature Communications Earth & Environment
- NeurIPS Workshop Proposals 2024
- European Conference on Computer Vision 2022
- KDD Workshop on Data-driven Humanitarian Mapping Workshop 2022
- IEEE/CVF Conference on Computer Vision and Pattern Recognition 2022
- Conference on Neural Information Processing Systems (NeurIPS) Workshops 2021
- Remote Sensing of Environment, Volume 262
- International Conference on Computer Vision (ICCV) 2021
- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2021
- ACM Digital Threats: Research and Practice 2020
- IEEE Transactions on Emerging Topics in Computational Intelligence 2020

- IEEE Software Special Issue on "The AI Effect: Working at the Intersection of AI and Software Engineering" 2020
- Live Music at the NeurIPS 2019 Banquet
- Innovative Applications of Artificial Intelligence (IAAI) 2019
- AI Grant 2018
- AI Grant 2017

Teaching Experience

Co-Instructor Fall 2024
War? Emerging Technologies and International Security
University of California, Berkeley

Teaching Assistant Summer 2014
Introduction to Programming for Bioinformatics
Department of Biomedical Informatics,
University of Pittsburgh

Awards

Timothy B. Campbell Innovation Award 2024
- This award is presented to a Computer Science or Electrical Engineering undergraduate or graduate student who demonstrates a spirit of innovation, collaboration, and creativity through their research and personal life.

National Science Foundation Fellowship 2022
- Awarded the NSF Graduate Fellowship for Digital Transformation of Development. This fellowship provides me with full tuition and stipend support to further pursue research at the intersection of artificial intelligence for humanitarian assistance and disaster response.

H2H8 Graduate Research Grant to Advance Humanity 2022
- The H2H8 Association, a non-profit focused on technology for social good, awards $10k research grants for ideas that will have an outsized impact on humanity in the near future. This grant will support my research on using satellite data to support first responders in real-time, messy environments.

Pitt Startup Blitz - Winner Nov 2014
- Developed a business plan and mobile application for a student-university healthcare system interface.

NASA International SpaceApps Pittsburgh - Winner Apr 2015
- Created a research curation and tagging tool that allowed scientists to better annotate their data using Twitter.

Red Bull Hack The Hits - Winner Apr 2016
- Created a all-in-one string instrument using an Arduino, cardboard, and thin potentiometers. Featured in Forbes magazine.

Service

Co-Director and Founder August 2021 - present
Berkeley AI Research Climate Initiative

- Founded and organized the BAIR Climate Initiative which unites AI and climate-related researchers to solve difficult scientific problems that necessitate bridging our communities.
- Raised funding from industry and government sources to fund research at the intersection of AI x Climate at Berkeley.

- Brokered partnerships between Berkeley and industry, government, and other universities to perform meaningful research and transition it into production with partners in the field.

Editor-in-Chief August 2021 - present
Berkeley AI Research Blog

- Reviewing, curating, and managing the operation of the BAIR Blog. The BAIR Blog has a monthly readership of 20,000 AI professionals around the world.

Technical Lead July 2020 - October 2023
NASA Harmful Algal Bloom Working Group

- Led the creation of an computer vision prize competition focused on identifying and measuring algal blooms from publicly available satellite imagery.

Member Oct 2020 - January 2021
AI Governance: International Engagement Subcommittee

- Coordinating with partners at the Joint AI Center, Office of the Under Secretary of Defense for Policy (USD(P)), and more to align DoD's international goals and initiatives as related to AI and its use.

Member April 2020 - Dec 2020
Department of Defense Coronavirus Task Force

- Coordinated with FEMA, DHS, HHS, and the State Department to track and monitor of COVID-19 outbreaks across the country.
- Informed senior government leadership on the results of complex, ongoing academic studies in the field of computational epidemiology.

Senior Advisor and Technology Evangelist Jan 2020 - Jan 2023
Autonomous Combat Warfighter Team

- Accelerating DoD adoption of combat autonomy as senior mentor to fighter aviation community
- Guiding foundational application of AI/ML to multiple autonomous air combat programs.

Board of Advisors Mar 2018 - Jan 2020
Children's Hospital of Pittsburgh

- Guiding the Children's Hospital with organizing technology outreach initiatives such as hackathons.
- Helped organize Hack This Help Kids, the first pediatrics hackathon hosted by the Children's Hospital. 280+ students across 48 universities participated in 53 teams and created impactful solutions for future tech transfer.

Dean Search Committee Oct 2016 - Mar 2017
School of Computing and Information,
University of Pittsburgh

- Helped create the position profile for the Founding Dean position.
- Met with and interviewed all applicants and candidates through three rounds of interview phases.
- Represented the interests of the undergraduate student population.

The Pitt Challenge Nov 2016 - Feb 2017
School of Pharmacy,
University of Pittsburgh

- Created and directed the Pitt Challenge, a 24-hour hackathon that merged together pharmacy, computer science, and engineering.
- Handled logistics, sponsorship, and marketing for the entire event, culminating in a successful event with massive backing from the University.

SteelHacks Nov 2014 - Apr 2016
University of Pittsburgh

- Created and directed SteelHacks, the largest hackathon in Pittsburgh.
- Director of SteelHacks for two years, Director Emeritus since April 2016.
- Directed sponsorship and logistics for the event, raising over $60,000 from over a dozen sponsors.

Selected Invited Talks

- Computer Vision for Large Images and the Dual-Use Nature of AI (Stanford University) — Nov 2024
- The Need for Tech-Informed AI Governance (Oxford University) — Oct 2024
- Data-Centric AI Governance (Georgetown University) — Oct 2024
- Computer Vision for Large Images and the Dual-Use Nature of AI (Johns Hopkins University) — Sep 2024
- Analyzing Chinese Targeting Models in the Open Source (Central Intelligence Agency) — Sep 2024
- AI for Humanitarian Assistance and Disaster Response (UC Berkeley Law School) — Mar + Sep 2024
- Geospatial Foundation Modeling (NVIDIA) — Feb 2024
- Fighting Wildfires with AI-powered Insights (ITU) — Apr 2023
- Leveraging the Power of AI Partnerships to Address Natural Disasters (NVIDIA GTC) — Mar 2023
- AI and Remote Sensing for Humanitarian Assistance and Disaster Response (Caltech) — Mar 2023
- The Evolution of AI and Earth Observation for Humanitarian Assistance (FEMA) — Dec 2022
- The Future of AI for Humanitarian Assistance and Disaster Response (SatSummit) — Oct 2022
- Using AI for Social Good - Preventing Illegal Fishing in Protected Waters (MIT) — Apr 2022
- Emerging Tech for Wildfire Prevention, Tracking, and Prediction (NVIDIA GTC) — Mar 2022
- AI for Humanitarian Assistance, Disaster Response, and Climate Change (Microsoft) — Feb 2022
- xView3: Preventing Illegal, Unreported, and Unregulated Fishing (UC Berkeley) — Sep 2021
- Operational Use of xView 2 Algorithms for the 2020 California Fire Season (Tactical Fire Remote Sensing Advisory Committee 2020) — Nov 2020
- Robotic Anomaly Detection (Carnegie Mellon University CyLab) — Sep 2019
- Robotic Anomaly Detection and Inverse Reinforcement Learning — May 2019

(Bossa Nova)

- Doing it With Less With Challenge-Based Acquisition — Oct 2018
  (Carnegie Mellon University)
- Open Problems in Robotic Anomaly Detection: A ML Perspective — Oct 2018
  (Carnegie Mellon University)

SKILLS

Languages:

- Python, Java, Scala, MATLAB, C, R

Technologies and Frameworks:

- *Deep Learning*: PyTorch, TensorFlow, Jax
- *Numerical Computation*: Numpy, Scipy, Numba, JAMA, Breeze
- *Distributed Computing*: Apache Spark, Hadoop, Hive, Cassandra, Mesos, YARN, OpenMP, CUDA
- *Robotics*: ROS, ROS 2.0

CERTIFICATIONS AND COURSES

Graduate Certificate in Security Policy — Jan 2023
- Center for Security in Politics - University of California, Berkeley

Data or Specimens Only Research — Feb 2019 - Feb 2022
- Massachusetts Institute of Technology (No. 30454375)

Leadership Development Program — Dec 2018
- Carnegie Mellon University Software Engineering Institute

Responsible Conduct of Research for Engineers — Apr 2018
- Carnegie Mellon University (No. 26894293)

Biomedical Research - Basic/Refresher — Apr 2018 - Apr 2021
- Carnegie Mellon University (No. 26735482)

Health Privacy — Apr 2018
- Carnegie Mellon University (No. 26735483)

Information Security — Apr 2018
- Carnegie Mellon University (No. 26735484)

Laboratory Safety and Bloodborne Pathogen Training — Jun 2013 - Jun 2014
- University of Pittsburgh