Jaspreet Ranjit

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RESEARCH INTERESTS	I am a third year Ph.D. student at the University of Southern Cal of Engineering advised by Prof. Swabha Swayamdipta and st ter for AI in Society . Previously, I was a Research Assistant guage and Learning Lab , working with Prof. Vicente Ordóñ in visual recognition models.	ifornia Viterbi School udent leader of Cen - in the Vision , Lan - ez on exploring biases
EDUCATION	TION University of Southern California, Los Angeles, CA Ph.D. Student, Computer Science Advised By: Swabha Swayamdipta	
	University of Virginia, Charlottesville, VA Master of Science, Computer Science, December 2021 Advisor: Prof. Vicente Ordóñez Thesis: Analyzing Gender Biases in Visual Recognition Models Relevant Courses: Machine Learning, Vision and Language, Na cessing, Algorithms, Cloud Computing, Geometry of Data, Machi Analysis	atural Language Pro- ine Learning in Image
	University of Virginia, Charlottesville, VA Bachelor of Science, Computer Science, May 2021 Rodman Scholar: Top 5% of Engineering Class Relevant Courses: Computer Science - Python, Java & C++/ rithms, Theory of Computation, Computer Architecture, Machin Intelligence, Human Computer Interaction in Software Develop tems, Probability, Linear Algebra, Ordinary Differential Equation	C, Analysis of Algo- ne Learning, Artificial ment, Operating Sys- ns
RESEARCH EXPERIENCE	Data, Interpretability, Language and Learning Lab (DIL Graduate Research Assistant Advisor: Prof. Swabha Swayamdipta Focus: My research interests lie in investigating how language m derstand sensitive societal issues by exploring collaborative sett experts and generative models.	L) Los Angeles, CA Fall 2022 - Present odels can help us un- ings between domain
	The Vision, Language and Learning Lab at UVA Machine Learning Research Assistant Advisor: Prof. Vicente Ordóñez Focus: Analyzed the impact of model characteristics such as: network architecture, and training setting on the representation visual recognition models. In collaboration with Columbia Univer Ray Thesis	Charlottesville, VA Nov 2020 - July 2022 pretraining dataset, n of gender biases in rsity: Prof. Baishakhi
	UVA Engineering Link Lab Machine Learning Research Assistant Advisor: Prof. Madhur Behl Focus: Aggregated the Traffic Scenario Similarity Dataset (TSS man ranking annotations for similarity between traffic scenarios multi-modal transformer networks in Pytorch for tagging traffic Project Site	Charlottesville, VA Aug 2019 - Nov 2020 S) which contains hu- . Experimented with c videos with labels.
	UVA Assesses Engineering Descende Crown	Charletteerille VA

UVA Aerospace Engineering Research Group Machine Learning Research Assistant Advisor: Prof. David Sheffler Focus: Developed a prototype of a 3D printed UAV that completes a mission autonomously using a Raspberry Pi and Pixhawk companion computer and designed machine learning programs for object recognition and communication in OpenCV for precise missions.

PUBLICATIONS Jaspreet Ranjit, Brihi Joshi, Rebecca Dorn, Laura Petry, Olga Koumoundouros, & PREPRINTS Jayne Bottarini, Peichen Liu, Eric Rice, Swabha Swayamdipta. OATH-Frames: Characterizing Online Attitudes Towards Homelessness via LLM Assistants. In Proceedings of EMNLP (to appear) 2024. https://arxiv.org/abs/2406.14883

Jaspreet Ranjit, Tianlu Wang, Baishakhi Ray, and Vicente Ordonez. Variation of Gender Biases in Visual Recognition Models Before and After Finetuning. Neurips 2023 Workshop on Algorithmic Fairness through the Lens of Time. https://arxiv. org/abs/2303.07615

Aron Harder, Jaspreet Ranjit, and Madhur Behl. Scenario2Vector: scenario description language based embeddings for traffic situations. Proceedings of the ACM/IEEE 12th International Conference on Cyber-Physical Systems (ICCPS '21). Association for Computing Machinery, New York, NY, USA, 167–176. https://doi.org/10.1145/ 3450267.3450544

Jaspreet Ranjit, Madhur Behl, & Catherine Baritaud. Scenario2Vec: A Scenario Description Language to Characterize Traffic Scenarios for the Development of a Certification Scheme. Retrieved from https://doi.org/10.18130/v3-16d9-gn66

WORK Vimeo New York, NY **EXPERIENCE** Machine Learning Researcher on Search and Recommendations Jun 2021 - Aug 2021 Analyzed gender biases in search and recommendation models and formulated a bias identification framework with the Rank Bias metric quantifying gender biases in ranked search results. Developed learning to rank (LTR) models in Pytorch using RankNet and LambdaMART, and developed an internal dataset for LTR models in private search. Worked with big data in Snowflake and wrote queries in SQL to scale bias experiments. Mentor: Silvena Chan. Medium Publication

> Minimally Invasive Spinal Technology Charlottesville, VA Machine Learning Engineer and SWE Lead Oct 2019 - Aug 2020 Worked as a lead Machine Learning Researcher to develop machine learning algorithms in Pytorch and Keras for the analysis and prediction of scoliosis using Unet++ and Centernet. Deployed this model for medical testing using Docker, AWS and Django. Mentor: Alexander Singh

> **Expedition Technology** Herndon, VA Machine Learning Engineer Jun 2019 - Aug 2019 Researched anchorless object detection techniques for 3D point cloud object detection. Designed a convolutional neural network on the basis of existing VoxelNet and Center-Net architectures in Tensorflow. Mentor: Cheryl Daner. Summary of Work

NASA Goddard Spaceflight Center Greenbelt, MD Core Flight Software Engineer Jun 2018 - Aug 2018 Developed and benchmarked core Flight Software apps in C/C++ that directed AI image processing and command/telemetry with ground station. Worked with Xilinx Platform Studio and ISE Design Suite. Mentor: Alessandro Geist

NASA Langley Research Center

Hampton, VA Jun 2016 - Aug 2016

3D Printing Engineer Leveraged sensor technology to design and improve the dimensional integrity of a printed component using Pronterface. Designed 3D components in Inventor. Mentor: Godfrey Sauti

TALKS & USC Media Coverage: USC covers our work on OATH-Frames: Characterizing On-AWARDS line Attitudes Towards Homelessness via LLM Assistants. Best Poster Award: ShowCAIS 2024: Awarded best poster at annual conference organized by Center for AI in Society. CAIS++ Talk: Gave a talk at CAIS++ on OATH-Frames: Characterizing Online Attitudes Towards Homelessness via LLM Assistants. Rodman Scholar Academic honor awarded to top 5% of undergraduate engineering class at University of Virginia Cornell, Maryland, and Max Planck Pre-Doctoral Research School: Promising undergraduate and Masters students are invited to attend this program that provides an overview of the state of the art research in Computer Science. Truly OpenML: Led a team of four people to pitch a web application that provides a collaborative, intuitive and accessible platform for individuals who are passionate about learning machine learning (ML). Semi-finalist at the American Evolution Innovator's Cup.

SERVICE &Student Leader of CAIS: As student leader, introduced new CAIS Think TankLEADERSHIPseries to foster more interdisciplinary collaborations amongst Engineering and Social
Work. Organizing student-led conference for 2025.

Student Mentoring: Myles Phung (1st year Master's Student), Ruyuan Zhou (Graduated Master's Student)

Reviewer: EMNLP 2024, ACL 2024

Society of Women Engineers

Charlottesville, VA

Performed service projects at high schools in Charlottesville area to educate minority students about engineering opportunities

PROJECTS Project Clear Skies: UVA HooHacks:Developed a web app using RestAPI that aggregates real time data about a natural disaster from social media sources giving first responders the ability to perform rapid searches using key words and features. Leveraged Google Vision API and Tensorflow for image classification to provide an accurate assessment of the severity of disasters to reach victims and allocate resources more efficiently. *Code Release*

Save the Children: UVA Data Science Hackathon: Prototyped transformer models in Pytorch for generating infrastructure damage values that can be applied to MDI's predictive analytics model in an effort to better help with displacement efforts due to disasters. *Code Release*