Suzanne Petryk

spetryk@berkeley.edu
suziepetryk.com

EDUCATION

University of California, Berkeley, Berkeley, CA **August 2019 - Present**
Current Ph.D. candidate in AI - *Vision & Language* *Expected graduation June 2024*
Co-advised by Prof. Trevor Darrell and Prof. Joseph E. Gonzalez at BAIR.

Cornell University, College of Engineering, Ithaca, NY **August 2015 - May 2019**
Bachelor of Science, Computer Science
GPA: 3.84; Dean's List All Semesters

RESEARCH

Graduate Student Researcher **August 2019 - present**
Advisors: Prof. Trevor Darrell, Prof. Joseph Gonzalez *University of California, Berkeley*

- Generally focused on reliability of vision and language models, *e.g.*: How do we localize and reduce hallucinations in generated text? How do we measure and use uncertainty? How do we mitigate bias?
- Research philosophy around building simple, scalable methods.

Summer Undergraduate Program of Engineering Research at Berkeley **June - August 2017**
Advisor: Prof. Alexandre Bayen *University of California, Berkeley*

- Collaborated on paper on use of loop detector data to estimate arterial traffic flow fundamental diagram.
- Implemented algorithm to identify lane blockages at signalized intersections using traffic simulator.
- Presented research as plenary speaker for Ivy League Undergraduate Research Symposium in November 2017.

Materials Research Science & Engineering Centers REU Program **June - August 2016**
Advisor: Prof. Taylor Sparks *University of Utah*

- Collaborated on paper on effect of topological insulator crystal growth conditions on material properties.
- Won REU's poster competition and presented at 2017 National Council on Undergraduate Research.

SELECTED PUBLICATIONS

Suzanne Petryk, Spencer Whitehead, Joseph E. Gonzalez, Trevor Darrell, Anna Rohrbach, Marcus Rohrbach.
Simple Token-Level Confidence Improves Caption Correctness.
Preprint, Under submission. 2023. arxiv.org/pdf/2305.07021.pdf

- We used token-level confidences from a captioning model to achieve state-of-the-art object hallucination rates.

Spencer Whitehead*, **Suzanne Petryk***, Vedaad Shakib, Joseph E. Gonzalez, Trevor Darrell, Anna Rohrbach, Marcus Rohrbach.
Reliable Visual Question Answering: Abstain Rather Than Answer Incorrectly.
ECCV 2022. arxiv.org/pdf/2204.13631.pdf

- We learned an uncertainty estimator to abstain on difficult VQA inputs.

Suzanne Petryk*, Lisa Dunlap*, Keyan Nasseri, Joseph E. Gonzalez, Trevor Darrell, Anna Rohrbach.
On Guiding Visual Attention with Language Specification.
CVPR 2022. arxiv.org/pdf/2202.08926.pdf

- We used CLIP to guide the attention of a CNN classifier away from biases.

EMPLOYMENT EXPERIENCE

Visiting Researcher, *Meta* (FAIR Labs) **January 2022 - Present**
Managers: Dr. Kate Saenko (current), Dr. Marcus Rohrbach

- Researching uncertainty estimation and applications to visual question answering and image captioning.
- Paper accepted at ECCV 2022 on reliable visual question answering.

AI Intern, *SafelyYou* (Startup using AI to improve safety at senior living communities) **July 2021 - May 2022**

- Implemented object detection models with PyTorch for automated fall detection.

– Implemented domain adaptation framework for adapting to new facilities.

Computer Vision Teaching Assistant, *Cornell University* **January - May 2019**
– Developed new machine learning project for students from scratch.

Data Science Intern, *Citrine Informatics* (Startup using AI to accelerate materials R&D) **June - August 2018**
– Built framework in Scala to accelerate training data collection for ML model on materials datasets.
– Built and thoroughly documented ML pipeline from data collection to model testing. Used pipeline to predict probability of success for separate ML process as a form of meta-learning.

Operating Systems Teaching Assistant, *Cornell University* **August 2018 - December 2018**
– Contributed the most answers to student questions on online Q&A forum for course out of 21 undergraduate TAs.

OUTREACH

AI4ALL, *Instructor* **August 2019, August 2020, August 2021**
– Taught group of high school students in week-long summer program targeting underrepresented students in computer science
– Developed projects around reinforcement learning (2019) and GANs (2020, 2021)

Berkeley AI Research Undergraduate Mentoring Program *Mentor* **August 2019 - August 2020**

Girls Who Code, *Volunteer Teacher* **September 2016 - May 2019**
– Teaching on a weekly basis a class of 20 high school students fundamental computer science concepts with JavaScript
– Assisting individual students with course projects, including basic web design and Arduino programming

SPECIALIZED SKILLS

Programming: Python, Git, Emacs, Scala, C, JavaScript, Matlab
Maching Learning Frameworks: PyTorch, Tensorflow
Languages: Polish (conversational), Spanish (intermediate), Latin (basic)