VENKATESH SIVARAMAN

318-773-2585
venkats@cmu.edu • github.com/venkatesh-sivaraman

634 College St
Pittsburgh, PA 15232

PROFILE

CMU PhD student in Human-Computer Interaction with experience in machine learning, data visualization, and medical data analysis. Interested in designing AI-based tools to help decision makers while promoting positive societal impact.

EDUCATION

Current Ph.D. student, Carnegie Mellon University

- Human-Computer Interaction
- *Advisor:* Adam Perer
- *Relevant coursework:* Human Judgment and Decision Making, Multimodal Machine Learning

S.B., Massachusetts Institute of Technology (2020)

- Computer Science and Molecular Biology, Minor in Music
- *Final GPA:* 5.0
- *Relevant coursework:* Software Studio, Multimodal User Interfaces, Deep Learning in the Life Sciences

PUBLICATIONS

Sivaraman, V., Wu, Y., & Perer, A. (2022). Emblaze: Illuminating machine learning representations through interactive comparison of embedding spaces. To appear in *ACM IUI 2022*.

Kawakami, A., **Sivaraman, V.**, Cheng, H., Stapleton, L., Cheng, Y., Qing, D., Perer, A., Wu, S., Zhu, H., & Holstein, K. (2022). Improving human-AI partnerships in child welfare: Understanding worker practices, challenges, and desires for algorithmic decision support. Under review, *ACM CHI 2022*.

Wu, J., **Sivaraman, V.**, Kumar, D. (*first three authors equal contribution*), Banda, J. M., & Sontag, D. (2021). Pulse of the pandemic: Iterative topic filtering for clinical information extraction from social media. Full paper published in *Journal of Biomedical Informatics*.

Newman-Griffis, D., **Sivaraman, V.**, Perer, A., Fosler-Lussier, E., & Hochheiser, H. (2021). TextEssence: A Tool for Interactive Analysis of Semantic Shifts Between Corpora. *NAACL Systems Demonstration*.

Hwang, T., Parker, S. S., Hill, S. M., Ilunga, M. W., Grant, R. A., **Sivaraman, V.**, Mouneimne, G., & Keating, A. E. (2021). A proteome-wide screen uncovers diverse roles for sequence context surrounding proline-rich motifs in Ena/VASP molecular recognition. Under review.

Sivaraman, V., Yoon, D., & Mitros, P. (2016). Simplified audio production in asynchronous voice-based discussions. First author full paper and presentation, *ACM CHI 2016*.

CONFERENCE PRESENTATIONS

"Simplified Audio Production in Asynchronous Voice-Based Discussions." Gave full paper talk at CHI 2016.

ADDITIONAL RESEARCH EXPERIENCE

Keating Lab, MIT Biology Department — 2018 - 2020

- Advised by Prof. Amy Keating
- Built a flexible high-throughput Python pipeline to compute and predict protein binding affinities
- Developed a C++ toolkit for designing novel peptides, and an 3D visualization tool to render those peptides around a known protein
- Coauthor on two manuscripts pending submission

Structural Bioinformatics Lab, Pompeu Fabra University — Summer 2018

- Advised by Prof. Baldo Oliva
- Created machine learning models to predict mutation-induced changes in protein-protein and DNA-transcription factor interactions

Kloczkowski Lab, Nationwide Children's Hospital — 2014 - 2016

- Advised by Prof. Andrzej Kloczkowski
- Developed a novel algorithm to predict protein structure based on statistics of amino acid orientations

TEACHING EXPERIENCE

Teaching Assistant, Fundamentals of Music Processing, MIT (Fall 2019)

- As the only TA for the class, led office hours, helped prepare lecture, lab, and homework materials, and taught one lecture

INDUSTRY EXPERIENCE

Software Engineering Intern, Verily Life Sciences — Summer 2019

- Worked on the Clinical Studies Platform Data Science team
- Designed and implemented an Apache Beam pipeline using both novel and existing NLP algorithms to process the ClinicalTrials.gov database

Software Engineering Intern, Apple — Summer 2017

- Developed software in Swift supporting the CarPlay, HomeKit, and MFi certification programs
- One of three projects selected to present to Apple VP of Product Integrity

Self-Employed, Base 12 Innovations — 2010 - present

- Developed seven iOS apps with over 750K total downloads, including a pioneering interactive geometry system (Isosceles) and the de-facto MIT course planning app (FireRoad)

HONORS AND AWARDS

Merck Prize, MIT (2020)

- For research and academic performance in biophysical or bioinformatics sciences
- Awarded to one student in the MIT Biology department each year

Louis Sudler Prize in the Arts, MIT (2020)

- MIT Institute Award given annually to one graduating senior for music, theater, painting, sculpture, design, architecture, or film

Phi Beta Kappa, Invited at MIT (2020)

SKILLS

- *Techniques:* Deep learning, NLP, UI design, qualitative HCI methods, crowd-work studies
- *Programming languages:* Python and Swift (6+ years); JavaScript, Java, C++, C# (1+ years)
- *Tools:* TensorFlow, PyTorch, iOS/Android SDKs, Apache Beam, BigQuery, OpenGL, Vue, Svelte
- Advanced Spanish speaker
- Classical pianist