Yusuf H. Roohani

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EDUCATION

Stanford University, Stanford, CA — *Jan 2020 - Present*
Ph.D., Biomedical Data Science, Advisor: Jure Leskovec — GPA: 4.15/4.0
Graph representation learning, Systems Biology, high throughput experiment design

Carnegie Mellon University, Pittsburgh, PA — *Jan 2014 - Aug 2015*
M.S., Mechanical Engineering. Advisor: Peter Adams, Allen Robinson — GPA: 4.0/4.0
Atmospheric Physics, Fluid Dynamics, Machine Learning, Computer Systems

Vellore Institute of Technology, Vellore, India — *Jul 2009 - Jun 2013*
B.Tech., Mechanical Engineering. — GPA: 8.81/10
GRE: Verbal: (98 percentile) 168/170, Quant: (94 percentile) 168/170 — 336/340

WORK EXPERIENCE

GlaxoSmithKline, San Francisco, CA
AI/ML Engineer — *Jan 2020 - Present*
Employed at GSK during PhD at Stanford. No restrictions on PhD research. See Awards

Manager, Machine Learning Engineer, Cambridge, MA — *Apr 2019 - Jan 2020*
- Industrialized an end-to-end machine learning system for phenotypic drug discovery
- Applied to an active program for discovering new biological targets

Investigator — *Nov 2017 - Mar 2019*
- Leading a team of 4 to develop a computer vision platform for high throughput screening
- Relating phenotypic readouts from cellular imaging with transcriptomics
- Created and lead company-wide machine learning journal club, monthly attendance >30

Data Scientist — *Jul 2016 - Oct 2017*
- Conducted machine learning research to uncover new drug targets and lead molecules
- Main efforts: Designing deep learning solutions for cellular imaging, histopathology
- Active contributor to team strategy, leadership engagement, academic collaborations

Theranos Inc., Palo Alto, CA
Associate Scientist, Modeler — *May 2016 - Jun 2016*
- Designed statistical & mechanistic approaches to predict diabetes onset using blood testing

Merrimack Pharmaceuticals, Cambridge, MA
Computational Modeler Intern — *Sep 2015 - Apr 2016*
- Developed dynamic system models to mechanistically simulate signaling networks in cancer
- Compared results against patient data to identify biomarkers for patient stratification

Carnegie Mellon University, Pittsburgh, PA
Research Assistant — *May 2014 - Aug 2015*
- Led a DOE sponsored project to model impacts of shale development on ozone, $PM_{2.5}$
- Published policy recommendations based on results and current federal regulations.

Tata Industries, Mumbai, India
Technical Analyst Intern *Sep 2013 - Nov 2013*
- Studied the latest research in material science under the strategic venture capital division
- Advised board on investments in commercially viable options through market research

Honors and Awards

Full PhD funding awarded by GSK, including tuition + regular full-time pay for 5yr *(2019)*
GSK Exceptional Science Award For application and embedding of deep learning *(2018)* to the challenge of phenotyping cellular images ($17000 in cash and shares)
Advisory Board Member for MS in Data Analytics program at Tufts University *(2018)*
Data Study Group Participant: Paid travel, stay at the Alan Turing Institute *(2018)*
Research Assistantship Awarded a PhD level research stipend as a Master's student *(2015)*
Undergraduate Research Assistantship Tuition covered for spending a semester at a nanotechnology research centre at Purdue University for my undergraduate thesis *(2013)*
Merit Certificates, Academic Excellence (International student) (x4) *(2010/11/12/13)*

Skills

Computer Programming: Python, R, C, C++, Fortran, Bash, OWL/SWRL
Applications: Tensorflow, PyTorch, MATLAB, LaTeX, Git, SQL, SolidWorks, Protege

Posters

Roohani Y., Sajid N., Hope T., Price C., Madhyastha P., Predicting Language Recovery after Stroke with Convolutional Networks on Stitched MRI, *NeurIPS ML4H Workshop*, 2018
Roohani, Y., Accelerating Phenotypic Drug Discovery using Deep Learning based Image Analysis *New York Academy of Science, Symp. Deep Learning in Drug Discovery*, 2018
Curley, M., Tan, G., Yannatos, I., Camblin, A., **Roohani, Y.**, Iadevaia, S., Louis, C., Lugovskoy, A. Istiratumab (MM-141), a bispecific antibody targeting IGF-1R and ErbB3, inhibits pro-survival signaling in vitro ... *AACR*, 2016. Abstract nr 1209.

Publications

Roohani Y., Kiss E., Improving Accuracy of Nuclei Segmentation by Reducing Histological Image Variability. In: Stoyanov D. et al. (eds) Computational Pathology and Ophthalmic Medical Image Analysis. MICCAI, COMPAY 2018. *LNCS*, vol 11039. Springer, 2018
Shokoohi H., LeSaux M., **Roohani Y.**, Litepio A., Huang C., Blaivas M. Enhanced point-of-care ultrasound applications by integrating automated feature-learning systems using deep learning, *J Ultrasound Med.*, 2018
Roohani, Y., Roy, A., Heo, J., Robinson, A., & Adams, P. Impact of natural gas development in the Marcellus and Utica Shales on regional ozone and fine particulate matter levels. *Atmospheric Environment*, 2017.

Invited talks

Assessing biological diversity of a compound collection using high throughput cellular imaging Society for Lab Automation and Screening Conference, 2020
Guest Lecture: Data Analytics and Machine Learning in Drug Discovery. Foundations of Data Analytics, School of Engineering, Tufts University, 2019
Accelerating High Throughput Drug Discovery Using Deep Learning. ReWork, Deep Learning for Healthcare, Boston 2018

Reviewing

MICCAI (2019)

Selected Coursework

Institution	Course	Number	Grade	Term
Stanford	Design and Analysis of Algorithms	**CS 161**	**A+**	Summer 2020
Stanford	Machine Learning	**CS 229**	**A**	Spring 2020
Stanford	Fundamentals of Real Analysis	**MATH 171**	**A**	Spring 2020
Stanford	Machine Learning with Graphs	**CS 224W**	**A**	Fall 2019
CMU	Introduction to Computer Systems	**15-213**	**A**	Summer 2015

Extra-Curriculars

Executive Director of the Debate Society, VIT *Jul 2010 - May 2012*

Personally trained more than 50 fellow students in effective argumentation through organizing and conducting regular sessions and debates. Independently drafted a written constitution.