Yusuf H. Roohani

Contact

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Education

Carnegie Mellon University, Pittsburgh, PA *Jan 2014 - Aug 2015*
M.S., Mechanical Engineering. GPA: 4.0/4.0
Coursework: Machine Learning, Computer Systems, Robot Kinematics and Dynamics, Computational Fluid Dynamics, Microfluidics, Microelectromechanical Systems

Vellore Institute of Technology, Vellore, India *Jul 2009 - Jun 2013*
B.Tech., Mechanical Engineering. GPA: 8.81/10
GRE: Verbal: (99 percentile) 168/170, Quant: (95 percentile) 168/170 336/340

Coursework while working full-time

Harvard Extension School, Cambridge, MA *Jul 2016 - May 2017*
Linear Algebra & Real Analysis (MATH-23A), GPA: 4.0/4.0
Mathematical Foundations of Statistical Software (25141)
Stanford University School of Medicine, Stanford, CA *Feb 2017 - Mar 2018*
Computational Methods for Biomedical Image Analysis (BMI-260) GPA: 3.7/4.0

Work Experience

GlaxoSmithKline, Cambridge, MA
Investigator (Early Promotion) *Nov 2017 - Present*
- Conducting machine learning research to uncover new drug targets and lead molecules
- Leading the development of a scalable computer vision platform for cellular imaging
- Aligning disparate data sets with imaging data, changing how hits are discovered.
- Created and lead company-wide machine learning journal club, monthly attendance >30

GlaxoSmithKline, Waltham, MA
Data Scientist *Jul 2016 - Oct 2017*
- Main efforts: Designing deep learning solutions for cellular imaging, histopathology
- Designed regular feedforward approaches as well as generative models, with validation
- Active contributor to team strategy, leadership engagement, academic collaborations

Theranos Inc., Palo Alto, CA
Associate Scientist, Modeler *May 2016 - Jun 2016*
- Independently designed statistical and mechanistic approaches to realistically predict onset of disease using blood testing data

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
- Main focus: Stochastic optimization, regularization, parameter estimation

Carnegie Mellon University, Pittsburgh, PA
Research Assistant *May 2014 - Aug 2015*
- Led an NETL 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

Skills

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

Posters

Roohani Y., Sajid N., Hope T., Price C., Madhyastha P., Predicting Language Recovery after Stroke with Convolutional Networks on Stitched MRI, *NIPS 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
Roohani, Y., Hoffman, A., Musso, R., Richmond, N., Deep Learning for Robust Phenotyping of High Content Cellular Images *High Content Analysis*, 2017
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

Accelerating High Throughput Drug Discovery Using Deep Learning ReWork, Deep Learning for Healthcare, Boston 2018

Honors and Awards

GSK Exceptional Science Award For application and embedding of deep learning to the challenge of phenotyping cellular images ($17000 in cash and shares) *(2018)*
GSK R&R Award For significant efforts at training colleagues in data science *(2018)*
Advisory Board Member Serving on the board for MS in Data Analytics at Tufts University Graduate School of Arts and Sciences *(2018)*
Ranked in top 11% as a one-person team in the 2018 Kaggle Data Science Bowl for segmenting nuclei in optical micrscopy images *(2018)*
Data Study Group Participant Selected to participate in a data study group (with paid travel and accomodation) at the Alan Turing Institute in London, UK. *(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 Certificate for Academic Excellence (International student category) for each of the 4 years in college *(2010/11/12/13)*

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. Independentally drafted a written constitution.