Satpreet H. Singh

satsingh@uw.edu ● www.linkedin.com/in/satpreetsingh ● 312-758-1580

EDUCATION:

PhD - Electrical & Computer Engineering (ML/AI, Computational Neuro.) — Sept 2017 - Present
University of Washington, Seattle, WA — GPA 3.71/4.0
• *Ongoing Research:* Machine learning on simultaneous brain and behavior recordings (Advisors: Bingni W Brunton and Rajesh PN Rao)

MS - Computer Science (Machine Learning/AI track) — Aug 2017
Oregon State University, Corvallis, OR — GPA 3.76/4.0
• *Thesis*: Probabilistic-modeling of microclimate sensor-network data (Advisor: Weng-Keen Wong)

MS – Electrical & Computer Engineering — Dec 2010
University of Iowa, Iowa City, IA — GPA 4.0/4.0

BEng. - Electronics Engineering — May 2006
University of Pune, India — *First Class w/ distinction*

SELECT COURSEWORK:
• *University of Washington*: Stochastic Processes, Information Theory, Linear Systems Theory, Multivariable Control, Neuronal Dynamics, Cognitive Neuroscience
• *Oregon State University*: Machine Learning, Probabilistic Graphical Models, Reinforcement Learning, Computer Vision, Convex Optimization, Theory of Statistics 1 & 2, Readings in Neuroscience, Approximation Algorithms
• *University of Iowa*: Design & Analysis of Algorithms, Graph Algorithms

CONFERENCE ABSTRACTS/POSTERS:
• **SH Singh**, SM Peterson, RPN Rao, BW Brunton, "Enabling naturalistic systems neuroscience: Interpretable representations for analysis of long-term human neural activity and behavior," Learning Meaningful Representations of Life Workshop at the 33rd Conference on Neural Information Systems Processing (NeurIPS 2019, Vancouver, Canada)
• **SH Singh**, RPN Rao, BW Brunton, "Enabling naturalistic neuroscience: Mining large-scale human behavior recordings.", BIOKDD 2019, 18th International Workshop on Data Mining in Bioinformatics (at KDD 2019, Anchorage, AK)
• **SH Singh**, SM Peterson, NXR Wang, RPN Rao, BW Brunton, "Analysis of large-scale naturalistic human brain and behavior recordings", Ninth International Workshop on the Statistical Analysis of Neuronal Data (SAND9, Pittsburgh, PA)

PAPERS:
• **SH Singh**, SM Peterson, RPN Rao, BW Brunton, "Enabling naturalistic neuroscience through behavior mining: Analysis of long-term human brain and video recordings", 2019 Conference on Cognitive Computational Neuroscience (Berlin, Germany)
• Z Liu*, Y Yao*, **S Singh**, Q Wei, SA Ramsey: "CERENKOV: Computational Elucidation of the Regulatory Noncoding Variome", Proceedings of the 8th ACM Intl. Conf. on Bioinformatics, Computational Biology, and Health Informatics.
• WF Krajewski, A Kruger, **S Singh**, BC Seo, JA Smith, "Hydro-NEXRAD-2: real-time access to customized radar-rainfall for hydrologic applications" J Hydroinformatics 15 (2), 580-590 9 2013

SELECT INDUSTRY EXPERIENCE:

Data Scientist - LinkedIn Corp (San Francisco Bay Area, CA) Aug'13 - Oct'14
• Data analysis & engineering on large-datasets on LinkedIn Subscription products. (1 yr 3 months)
• Survival Analysis to estimate Lifetime-Value (LTV) for subscription products
• Predicting the first search that a new subscriber would run on their account
• Organized & presented at onboarding boot-camp for new data-scientists/interns

Software Engineer, Machine Learning Team - Orbitz.com (Chicago, IL) Jan'11 - Aug'13
• Analysis of large transactional, clickstream/behavior & marketing data-sets. (2 yr 8 months)
• Learning to rank: Data engg. and feature-development on internal machine-learning & simulation tools for search-result optimization.
• Text-mining and sentiment-analysis on user-generated-content for website content and structure curation on SEO, SEM, CRM and main web platform.
• Product management: Presented team's work & product roadmap twice to CEO

USPTO PATENT APPLICATIONS

• (**Granted**) **SH Singh**, NI Lytkin; "Techniques For Providing Insights Relating To Job Postings"; US Patent 9,946,994 (LinkedIn Corp, 2018)
• **SH Singh**, S Sundaresh; "Predictive Uses Of Large Scale Data In Social Networking Applications" US Patent App. 20,160,125,560 (LinkedIn Corp, 2016)
• **SH Singh**, S Sundaresh; "Applicant Analytics For A Multiuser Social Networking System" US Patent App. 20,160,127,429 (LinkedIn Corp, 2016)
• V Goel, S Sundaresh, **SH Singh**; "Job Recommendation Engine Using A Company Employee Profile"; US Patent App. 20,150,317,753 (LinkedIn Corp, 2015)
• V Goel, S Sundaresh, **SH Singh**; "Creation Of Job Profiles Using Job Titles And Job Functions"; US Patent App. 20,150,317,754 (LinkedIn Corp, 2015)
• V Goel, S Sundaresh, **SH Singh**; "Company Personnel Asset Engine"; US Patent App. 20,150,317,609 (2015)

SELECT ACADEMIC PROJECTS:

• *PhD Rotation project*: Training algorithms for Chaotic Recurrent Neural Networks.Replicating C Elegans dynamics using RNN in Tensorflow. (PI: Eli Shlizerman)
• *Reinforcement Learning* - SARSA on-policy RL and transfer learning for an invasive species management problem (Computational Sustainability) with large action and state space.
• *Neural Dynamics*: Grid-cell like activity emerges in artificial RNN performing spatial-localization.
• *Linear Control Theory*: Linear quadratic control on simulated quadrotor dynamics
• *Computer Vision:* Multi-class classification of satellite-images: Kaggle Competition Spring 2017 (reached within ~1% of winner)

TEACHING EXPERIENCE::

• TA for (Graduate) Reinforcement Learning, Winter '17 (Oregon State University)
• TA for (Undergraduate) Web Programming, Fall '15 - Fall '16 (Oregon State University)

PROGRAMMING SKILLS:

• **Languages**: Python, R, Java, bash, HTML/CSS/Javascript
• **Platforms, DBs & Tools**: Linux, Git, Tensorflow/Keras/Pytorch, AWS,, Postgres/MySQL