

Nancy (Xin Ru) Wang

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EDUCATION

UNIVERSITY OF WASHINGTON

PHD IN COMPUTER SCIENCE AND ENGINEERING
Dec 2018 | Seattle, WA

UNIVERSITY OF BRITISH COLUMBIA

BS IN COMPUTER SCIENCE
May 2014 | Vancouver, BC
Dean's Honour List (All Semesters)
Top Academic award

SKILLS

LANGUAGES

Primary:

Python

Secondary:

Java • C++ • Matlab

Familiar:

Haskell • Prolog • MySQL

• JavaScript

TOOLS AND LIBRARIES

TensorFlow • PyTorch • React

• Flask • Docker

COMPUTER SCIENCE

Computer Vision • Signal Processing •

Natural Language Processing •

Machine Learning (Deep neural networks, unsupervised methods) •

Cloud computing and management

COURSEWORK

GRADUATE

Machine Learning

Systems for Machine Learning

Architecture for Machine Learning

Computer Vision

Database Management Systems

Statistical Methods in CS

Neural Control of Movement

Natural Language Processing

UNDERGRADUATE

Artificial Intelligence

Functional and Logic Programming

Theory of Computing

Probability and Statistics

RESEARCH

RESEARCH STAFF MEMBER | IBM RESEARCH

Mar. 2019 – Present | San Jose, CA

Research under the Scalable Intelligence department on applications of deep learning and computer vision for enterprise document extraction and understanding. I am developing both algorithms to automatically extract and understand documents as well as active learning tools and user interfaces to allow users to create tailored models for their domain.

GRADUATE RESEARCH ASSISTANT | UNIVERSITY OF WASHINGTON

Sep. 2014 – Present | Seattle, WA

- Graduate student researcher in computational neuroscience, computer vision and machine learning.
- Inventing and applying sensor-fusing deep learning and computer vision models for the automatic decoding and prediction of behaviour in multi-modal long-term (hundreds of hours) time-series data, including video, audio and neuro (electrocorticography).
- Founded project to automate neuroscience research. Working together with advisors (Drs. Ali Farhadi, Bing Brunton and Rajesh Rao), this is now a multi-year project funded by multiple grants from NSF and DARPA.

COMPUTER VISION PHD INTERN | ZILLOW INC.

Jun. 2018 – Sep. 2018 | Seattle, WA

Working with the latest computer vision and machine learning models to improve and innovate on various Zillow housing related products.

MACHINE LEARNING PHD INTERN | RAKUTEN INSTITUTE OF TECHNOLOGY

Mar. 2016 – Jun. 2016 | Tokyo, Japan

Applying and augmenting various unsupervised clustering algorithms and representation learning methods to learn user profiles and preferences to personalize search rankings and optimize page designs.

UNDERGRADUATE NSERC RESEARCH INTERN | UNIVERSITY OF VICTORIA

May 2014 - Aug. 2014 | Victoria, BC

Automated behavior classification of fish in natural environments using machine learning and computer vision techniques that was able to replace tedious expert annotations in Dr. Alexandra Albu's Laboratory for Applied Computer Vision Algorithms.

RESEARCH INTERN | ADVANCED TELECOMMUNICATIONS RESEARCH

Jan. 2013 - Aug. 2013 | Kyoto, Japan

Using multi voxel pattern activation and various machine learning methods, analyze and decode dreams from fMRI sleep data in research under Dr. Yukiyasu Kamitani.

RESEARCH INTERN | UNIVERSITY OF COLORADO

May 2012 - Aug. 2012 | Boulder, CO

Research with Dr. Randall O'Reilly designing behavioral experiments as well as analyzing models investigating on the interaction between instructional and reinforcement learning.

DAAD RESEARCH INTERN | MAX PLANCK INSTITUTE OF PSYCHIATRY

May 2011 - Aug. 2011 | Munich, Germany

Studied Post-Traumatic Stress Disorder at a molecular and animal scale at the Max Planck Institute of Psychiatry in Munich, Germany under Dr. Ulrike Schmidt

TEACHING

ASSISTANCE

Artificial Intelligence
Algorithms and Data structures
Models of Computation
Computation, Programs, Programming
Computer Vision
Machine Learning (Graduate)

SELECTED PUBLICATIONS

Carol Xin Yi Zheng, Douglas Burdick, Lucian Popa, and Nancy Xin Ru Wang. Global table extractor (gte): A framework for joint table identification and cell structure recognition using visual context. CVPR (Under Review), 2020.

Nancy Xin Ru Wang, Ali Farhadi, Rajesh Rao, and Bingni Brunton. Agile movement prediction: Multimodal deep learning for natural human neural recordings and video. AAAI (accepted - 25% acceptance rate, oral presentation), 2018.

Nancy Xin Ru Wang, Jared D Olson, Jeffrey G Ojemann, Rajesh PN Rao, and Bingni W Brunton. Unsupervised decoding of long-term, naturalistic human neural recordings with automated video and audio annotations. Frontiers in human neuroscience, 10, 2016.

Nancy Xin Ru Wang, Sarika Cullis-Suzuki, and Alexandra Branzan Albu. Automated analysis of wild fish behavior in a natural habitat. International Conference on Multimedia Retrieval (ICMR), Environmental Multimedia Retrieval (EMR) workshop, 2015.

Brenda Bingham, Nancy Xin Ru Wang, Leyla Innala, and Victor Viau. Postnatal aromatase blockade increases c-fos mRNA responses to acute restraint stress in adult male rats. Endocrinology, 153(4):1603–1608, 2012.

Leonie Herrmann, Irina A Ionescu, Kathrin Henes, Yulia Golub, Nancy Xin Ru Wang, Dominik R. Buell, Florian Holsboer, Carsten T. Wotjak, and Ulrike Schmidt. Long-lasting hippocampal synaptic protein loss in a mouse model of posttraumatic stress disorder. PLoS One, 7(8):e42603, 2012.

INVITED TALKS

Accelerating long-term, naturalistic ECoG understanding using automated video and audio annotations

Symposium on uncovering complexity with long-term naturalistic recordings @ OHBM

2017 | Vancouver, BC

Multimodal Neural Decoding with Natural Data from Humans

The Center for Neural Engineering and Computation @ Columbia University

2016 | New York City, NY

AWARDS

2016-2019	Additional stipend	NSERC Postgraduate Scholarship - Doctoral
2016-2019	Additional stipend	Alexander Graham Bell Canada Graduate Scholarships - Doctoral (Declined)
2016-2017	\$20000 Azure credits	Microsoft Azure Research Award
2015-2017	Full tuition and stipend	Joint Washington Research Foundation Innovation Graduate Fellow in Neuroengineering and Data Science
2014	Full tuition and stipend	Wilma Bradley Endowed Fellowship
2014	Research Grant	NSERC Undergraduate Summer Research
2009-2013	Full undergraduate scholarship	Hugh M. Brock Award
2011	German Research Scholarship	DAAD Research in Science and Engineering

EXTRA-CURRICULAR

2016-2017	Founder & President	UW High Performance Computing Club Cloud Chapter
2010-2011	Elected Science Councillor	UBC Alma Mater Society