

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

Familiar:

Java • C++ • Matlab • MySQL

• JavaScript

TOOLS AND LIBRARIES

TensorFlow • PyTorch

• Flask • Docker • Gradio

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

COMPUTER VISION APPLIED SCIENTIST | AMAZON

Apr. 2021 – Present | Berlin, DE

- Developing and tailoring computer vision and multi-modal LLM models for content understanding and product recommendations and discovery.
- Technical lead on 3 major projects that have successfully gone to production on Amazon's website in front of customers, resulting in multi-million dollar impact from increased sales and returns reduction.
- Recipient of a Door Desk award (awarded once per quarter at Amazon all-hands) for the high-quality dimension project that extracted from images to provide sizes for over 10 million products.
- Co-authored 5 publications at the internal Amazon computer vision conference. Lead on 1 publication that was short listed for best paper award related to improving CLIP models for predicting the theme of social shopping images.

RESEARCH STAFF MEMBER | IBM RESEARCH

Mar. 2019 – Mar. 2021 | 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.

TEACHING

ASSISTANCE

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

SELECTED PUBLICATIONS

Pushpendu Ghosh, Nancy Wang, and Promod Yenigalla. D-extract: Extracting dimensional attributes from product images. In Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision, pages 3641–3649, 2023.

Edward Sun, Yufang Hou, Dakuo Wang, Yunfeng Zhang, and Nancy X. R. Wang. D2S: Document-to-slide generation via query-based text summarization. In Kristina Toutanova, Anna Rumshisky, Luke Zettlemoyer, Dilek Hakkani-Tur, Iz Beltagy, Steven Bethard, Ryan Cotterell, Tanmoy Chakraborty, and Yichao Zhou, editors, Proceedings of the 2021 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies, pages 1405–1418, Online, June 2021. Association for Computational Linguistics.

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. Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision, 2021.

Lucy Lu Wang, Kyle Lo, Yoganand Chandrasekhar, Russell Reas, Jiangjiang Yang, Doug Burdick, Darrin Eide, Kathryn Funk, Yannis Katsis, Rodney Michael Kinney, Yunyao Li, Ziyang Liu, William Merrill, Paul Mooney, Dewey A. Murdick, Devvret Rishi, Jerry Sheehan, Zhihong Shen, Brandon Stilson, Alex D. Wade, Kuansan Wang, Nancy Xin Ru Wang, Christopher Wilhelm, Boya Xie, Douglas M. Raymond, Daniel S. Weld, Oren Etzioni, and Sebastian Kohlmeier. CORD-19: The COVID-19 open research dataset. In Karin Verspoor, Kevin Bretonnel Cohen, Mark Dredze, Emilio Ferrara, Jonathan May, Robert Munro, Cecile Paris, and Byron Wallace, editors, Proceedings of the 1st Workshop on NLP for COVID-19 at ACL 2020, Online, July 2020. Association for Computational Linguistics.

Nancy Xin Ru Wang, Ali Farhadi, Rajesh Rao, and Bingni Brunton. Ajile 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.

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