

Haonan Duan

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Education

University of Toronto

DOCTOR OF PHILOSOPHY IN COMPUTER SCIENCE

- Research Supervisor: Chris Maddison

Toronto, Canada

September 2021 - PRESENT

University of Waterloo

MASTER OF MATHEMATICS IN COMPUTER SCIENCE (THESIS OPTION)

- Research Supervisor: Pascal Poupart
- GPA: 93.4/100

Waterloo, Canada

September 2019 - July 2021

University of Waterloo

BACHELOR OF MATHEMATICS IN COMPUTER SCIENCE AND STATISTICS

- GPA: 94.0/100

Waterloo, Canada

September 2016 - July 2019

Research Interests

- Machine Learning
- Automated Reasoning
- Graph Learning
- Combinatorial Optimization
- Self-supervised Learning
- Trustworthy ML

Papers

Dataset Inference for Self-Supervised Models

ADAM DZIEDZIC, HAONAN DUAN, MUHAMMAD AHMAD KALEEM, NIKITA DHAWAN, JONAS GUAN, YANNIS CATTAN, FRANZISKA BOENISCH, NICOLAS PAPERNOT

NeurIPS, 2022

Augment with Care: Contrastive Learning for Combinatorial Problems

HAONAN DUAN*, PASHOOTAN VAEZIPOOR*, MAX B. PAULUS, YANGJUN RUAN, CHRIS J. MADDISON

ICML 2022

Distributional Reinforcement Learning with Monotonic Splines

YUDONG LUO, GUILIANG LIU, HAONAN DUAN, PASCAL POUPART AND OLIVER SCHULT.

ICLR 2022

Multiple Moment Matching Inference: A Flexible Approximate Inference Algorithm

HAONAN DUAN, PASCAL POUPART

UDL workshop @ ICML 2021

Online Bayesian Moment Matching based SAT Solver Heuristics

HAONAN DUAN*, SAEED NEJATI*, GEORGE TRIMPONIAS, PASCAL POUPART AND VIJAY GANESH.

ICML 2020

Discriminative Training of Feed-Forward and Recurrent Sum-Product Networks by Extended Baum-Welch.

HAONAN DUAN, ABDULLAH RASHWAN, PASCAL POUPART AND ZHITANG CHEN.

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Scholarships

- 2019 **Vector Scholarship in Artificial Intelligence**, 17500 CAD
- 2019 **David R. Cheriton Graduate Scholarship**, 20000 CAD
- 2019 **C.W. McLeish Memorial Undergraduate Scholarship for Excellence in Probability**, 2000 CAD
- 2018 **Faculty of Mathematics Senate Scholarships**, 6000 CAD

Presentation

Cleverhans lab

DATASET INFERENCE FOR SELF-SUPERVISED MODELS

Toronto, Canada

Aug. 2022

ICML 2022

CONTRASTIVE LEARNING FOR COMBINATORIAL PROBLEMS

Baltimore, USA

July. 2022

Uber ATG

A BAYESIAN LOOK AT SAT

Online

Oct. 2021

ICML 2020

ONLINE BAYESIAN MOMENT MATCHING BASED SAT SOLVER HEURISTICS

online

July. 2020

Services

Reviewer ICLR, ICML, NeurIPS, AAAI

Industry Experiences

Uber

SOFTWARE ENGINEER INTERN

San Francisco, USA

Jan 2021 - May 2021

- Work contributed to a patent application.
- Collected data in Spark and analyzed performance of geosearch engines.
- Built classifiers in PyThon to improve the performance of ranking algorithms.
- Integrated external machine learning models to Uber's engineering framework.

Thomson Reuters

DATA SCIENTIST INTERN

Toronto, Canada

May 2020 - Aug 2020

- Built text classification models in PyTorch to enable automatic approve or decline of bills submitted by law firms.
- Designed and implemented a named entity recognition model to automatically extract the keyword of interest from legal cases.
- Gained extensive experience with AWS framework and machine learning services, such as S3 and Sagemaker.

Teaching

University of Toronto

TEACHING ASSISTANT

- CSC 108: Introduction to Computer Programming
- CSC 311: Introduction to Machine Learning
- CSC 412/2506: Probabilistic Learning and Reasoning

Fall 2021
Summer 2022, Fall 2022
Winter 2022

University of Waterloo

TEACHING ASSISTANT

- MATH 136: Linear Algebra I
- MATH 147: Calculus I, advanced section
- MATH 235: Linear Algebra II
- STAT 231: Introduction to Statistics
- CS 145: Functional Programming, advanced section
- CS 486: Introduction to Artificial Intelligence

Winter 2019
Fall 2018
Fall 2018
Spring 2018
Fall 2019
Fall 2020