Ruiqi Wang

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Education

Simon Fraser University, Burnaby, Canada — September 2021 — Present
MSc in Computer Science (thesis-based) | **Supervisor**: Prof. Richard (Hao) Zhang | **GPA:** 4.11/4.33

The Australian National University, Canberra, Australia — February 2019 — December 2020
Master of Machine Learning and Computer Vision | **GPA:** 6.357/7 (Distinction)
Thesis: Multiple Constraints and Non-regular Solutions in Deep Declarative Network

Beijing Normal University, Zhuhai Campus, Zhuhai, China — September 2015 — June 2018
Bachelor of Engineering in Digital Media Technology | **GPA:** 3.61/4 (Top 3%, finished 4-years program in 3 years)
Thesis: Development of Interface based on RESTful API and RBAC System

Related Experience

Research Assistant — September 2021 — Present
GrUVi Lab, Simon Fraser University, Burnaby, Canada
Supervisor: Prof. Richard (Hao) Zhang

Visiting Scientist — November 2020 — June 2021
CSIRO's Data61, Black Mountain, Canberra, Australia
Supervisor: Dr David Ahmedt-Aristizabal | https://github.com/suikei-wang/Towards-Interpretable-Attention-Networks-for-Cervical-Cancer-Analysis

- Demonstrated the cervical cell images classification based on promising CNN models with attention
- Applied graph convolutional network (GCN) on cervical cell images for classification

Research Assistant — February 2020 — November 2020
Research School of Computer Science, ANU, Canberra, Australia
Supervisor: Prof. Stephen Gould | https://github.com/anucvml/ddn

- Developed multiple equality and inequality constraints optimization structure and the calculation of gradient in deep declarative nodes based on raw Python with various examples
- Explored the non-regular solution of different constraints in deep declarative nodes like overdetermined system, rank deficient and non-convex cases, which are not able to calculate the gradient directly
- Found the gradient in non-regular solutions: approximate the heuristic solution based on the Least-Squared method and orthogonal matching pursuit algorithm; calculate the exact solution through non-linear Lagrangian

Summer Research Assistant — November 2019 — February 2020
Research School of Computer Science, ANU, Canberra, Australia
Supervisor: Dr Charles Martin

- Generated fake piano music based on MAESTRO dataset using GANSynth in PyTorch framework
- Converted real and fake MIDI music into spectrograms, as the input of the binary classifier based on CNN and LSTM, which can discriminate real and fake music (more precise than the discriminator in GANSynth)

Publications

R. Wang, M. A. Armin, S. Denman, L. Petersson, and D. Ahmedt-Aristizabal, "Towards interpretable attention networks for cervical cancer analysis," in 43rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society Conference (EMBC), 2021.

Teaching

CMPT 713 Natural Language Processing at SFU — **Spring, 2023**
COMP 1730/6710 Programming for Scientist at ANU — **Semester 2, 2020**
COMP 3670/6670 Introduction to Machine Learning at ANU — **Semester 2, 2020**