Mohammed Adnan

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EDUCATION

University of Waterloo — **Waterloo, Canada**
MASc in Machine Learning & Vision GPA: 4.0/4.0 — *Expected Graduation: August 2021*

Indian Institute of Technology Guwahati — **Guwahati, India**
B.Tech in Electronics & Electrical Engineering — *Graduated: June 2019*

EXPERIENCE

University of Waterloo — **Waterloo, Canada**
Graduate Research Assistant — *Sept 2019 - Present*

- Currently working Continual Learning using Sparse Neural Networks, and Federated Learning.
- Proposed a new algorithm for learning Permutation Invariant Representations.
- Proposed new framework for Multiple Instance Learning using Graph Neural Networks.
- Proposed a new hierarchical learning framework for Multiple Instance Learning.
- Published in ECCV 2020, CVPR(W) 2020 & MICCAI 2021

Waterloo AI Institute — **Waterloo, Canada**
Indo-Canadian Research Fellow — *May 2018 – July 2018*

- Awarded fellowship by Govt. of India and Canada to do research at Waterloo AI Institute.
- Worked on One-Shot Content Based Image Retrieval for histopathology images.
- Designed GUI based image retrieval system for computer aided diagnosis. The network fine tunes as per pathologist's subjective opinions using their feedbacks.

National University of Singapore & Singapore Health — **Singapore**
Visiting Researcher — *May 2017 – July 2017*

- Worked on a joint project between National University of Singapore and SingHealth to study the effect of topography on liver and dental cells using machine learning algorithms.
- Worked in a multidisciplinary team consisting of medical doctors, biologists and engineers.
- Developed Image processing algorithms for prepossessing high throughput medical images.
- Implemented machine learning algorithms for analyzing high throughput medical images.

PUBLICATIONS

1. Pay Attention with Focus: A Novel Learning Scheme for Classification of Whole Slide Images: Shivam Kalra, *Mohammed Adnan*, Sobhan Hemati, Taher Dehkharghanian, Shahryar Rahnamayan, Hamid Tizhoosh, **MICCAI 2021**
2. Learning Permutation Invariant Representation using Memory Network: Shivam Kalra*, *Mohammed Adnan**, Graham Taylor, Hamid Tizhoosh, **ECCV 2020**
3. Representation Learning of Histopathology Images using Graph Neural Networks: *Mohammed Adnan**, Shivam Kalra*, Graham Taylor, Hamid Tizhoosh, **CVPR(W) 2020**
4. A Materiomics Approach to Pulp Regeneration: Pei Fang, Aliz Kunstar, Apoorva Shivankar, *Mohammed Adnan*, Hemant Unadkat, **American Association of Endodontists (AAE) Conference, 2018**
5. A novel topographical driven bioactive membrane for guided tissue regeneration: Aliz Kunstar,Apoorva Shivankar, *Mohammed Adnan*, Hemant Unadkat, **SingHealth Duke-NUS Scientific Congress 2018**
6. Super Resolution of Facial Images: *Mohammed Adnan*, **B.Tech Thesis**

* denotes equal contributions

AWARDS

1. **Shastri Indo-Canadian Research Fellowship 2018**
   Among 5 students to be awarded Shastri Indo Canadian Research Fellowship 2018
2. **Vector Institute Scholarship in AI 2019**
   Awarded merit based scholarship by Vector Institute, Canada
3. **University of Waterloo Graduate Scholarship 2020**
   Awarded scholarship for excellence in academics
4. **University of Waterloo Graduate Scholarship 2021**
   Awarded scholarship for excellence in academics

ADDITIONAL

- Relevant Coursework: Information Theory, Multivariate Analysis, Signal Processing, Speech Processing
- Programming Languages: Python, C, C++, Verilog, MATLAB
- Deep Learning Frameworks: TensorFlow, PyTorch, Pyro, PyTorch Geometric