Abdul Wahab

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Education

- **University of Alberta** — **Edmonton, Alberta**
  M.Sc–thesis Computer Science supervised by Dr. Martha White — *2021–Present*

- **National University of Sciences and Technology** — **H-12 Islamabad**
  QS ranking (Computer Science) : 143 , Asian Ranking: 76 — *2016–2020*
  BSc Computer Science , CGPA: 3.96 / 4.00 , Summa Cum Laude

Publications

A. Wahab, M. A. Tahir, N. Iqbal, A. Ul-Hasan, F. Shafait and S. M. Raza Kazmi, **"A Novel Technique for Short-Term Load Forecasting Using Sequential Models and Feature Engineering,"** in IEEE Access, vol. 9, pp. 96221-96232, 2021, doi: 10.1109/ACCESS.2021.3093481. [Paper] [Code]

Ahmad, A.,**Wahab, A.**, Slyne, F., Zeb, S., Khan, R. A., & Ruffini, M. **Capacity sharing approaches in multi-tenant, multi-service PONs for low-latency fronthaul applications based on cooperative-DBA.** 2020 Optical Fiber Communications Conference and Exhibition (OFC) (pp. 1-3). IEEE. [Paper] [Poster]

Research Experience

- **RLAI** — **Edmonton, Canada**
  Graduate Research Associate Fellow — *September 2021 -*
  - **Sample-efficient exploration via ensemble uncertainty estimates (Thesis)**
  - **Understanding the Role of the Representations in Offline-Online Reinforcement Learning**

- **Noah's Ark Lab, Huawei** — **Edmonton, Canada**
  Research Associate Intern — *May 2022 - August 2022*
  During this internship I started my research in the direction of sample-efficient exploration under supervision of Dr. Raksha Kumaraswamy.

- **Augmented Vision Lab (DFKI)** — **Kaiserslautern, Germany**
  Research Intern — *June 2019 - August 2019*
  I was selected for a summer research internship program in 2019 at the Augmented Vision lab, where I worked under the supervision of Prof. Dr. Didier Stricker and Dr. Gerd Reis . We developed a CNN-LSTM based architecture suited for sequential line-scan camera feed, for downstream segmentation and classification tasks. We tested and compared our algorithm with different benchmarks on several road-crack segmentation datasets. We also tested our methodology on industrial data for seed monitoring.

- **TUKL R&D Center** — **NUST SEECS, Islamabad**
  Research Assistant — *2018 - 2020*
  I was a research assistant at TUK-Lab working under supervision of Dr. Faisal Shafait . A few notable research projects I contributed to are:
  - **Line-scan camera feed processing with CNN-LSTMs (Thesis)**
  - **Short Term Energy Load Forecasting**
  - **Scheduling algorithm for multi-service, multi-tenant Passive Optical Networks**
  - **TCP's RTO prediction using sequence modeling for congestion control, and lower latency**

Academic Experience

- **Teaching Assistant**
  - **CMPUT-174 Foundations of Computation I** — **UoAlberta**
    Marianne Morris — *Winter'2022*
  - **CMPUT-101 Introduction to Computing** — **UoAlberta**
    Dr. Janelle Harms — *Fall'2021*
  - **CS-471 Machine Learning** — **NUST**
    Dr. Faisal Shafait — *Spring'2020*
  - **EE-353 Computer Networks** — **NUST**
    Dr. Arsalan Ahmad — *Fall'2019 & Spring'2019*
  - **CS-250 Data Structures & Algorithms** — **NUST**
    Dr. Faisal Shafait — *Fall'2018*
  - **CS-235 Computer Organization and Assembly Language** — **NUST**
    Mr. Taufeeq-ur-Rehman — *Fall'2018*

Work Experience

- **Veeve.io** — **Islamabad, Pakistan**
  Research Engineer — *July 2020-July 2021*
  I developed machine learning and vision-based solutions for different modules of a smart shopping cart at Veeve.io. I worked on cart state tracking, hand motion analysis, trajectory analysis, gesture prediction, shrinkage control, and bar-code reading through vision modules.
- **VisionX Technologies LLC** — **CIE NUST, Islamabad**
  Research Intern — *July 2018-August 2018*
  During my internship at VisionX , we worked on developing a hierarchical topology of classification models to deal with a large number of class labels.
- **System Analysis & Verification Lab** — **NUST SEECS, Islamabad**
  Research Intern — *July 2018-August 2018*
  During my internship I worked under supervision of Dr. Osman Hasan on developing a white box testing tool kit. The tool provides three types of tests: 1. Dead Code Testing. 2. Assertion Based Testing. 3. Exception Testing.

Awards & Accolades

2020 **President's Gold Medal**, awarded for graduating with the highest distinction.

2019 Selected for summer research internship at Augmented Vision lab (DFKI), funded by DAAD.

2019 **Second Position in UG Star Researcher Competition** held in SEECS, NUST.

2016-2020 Dean's list for high achievers and Merit based Scholarship (all semesters).

Skills

- **Skills:** Reinforcement Learning, Machine Learning, Deep Learning, Computer Vision.
- **Programming Languages:** Python, C++
- **Frameworks & Libraries:** Pytorch, Tensorflow, and Keras