ASHISH JAISWAL

Ph.D. Student in Computer Science

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EXPERIENCE

Graduate Teaching/Research Assistant
CSE, University of Texas at Arlington

📅 August 2019 – Present   📍 Arlington, TX, USA

- Research in CV, ML, and HCI at Heracleia HCC Lab
- Teaching Assistant for programming courses: C, JAVA

Scientific Applications Programmer
SocialEyes NP

📅 April 2019 – July 2019   📍 Kathmandu, Nepal

- Researched & implemented vision techniques to detect diseases from retinal images targeting macular-degeneration
- Built a risk analysis matrix dashboard to visualize patient's health parameters and history

Software Engineer
Insight Workshop (Python Team)

📅 Dec 2017 – May 2019   📍 Kathmandu, Nepal

- Wrote effective, scalable code in Django & Angular and developed back-end components to improve responsiveness and overall performance
- Implemented security and cloud solutions with AWS Services (EC2, RDS, S3, Lambda, CloudWatch)
- Incorporated classical ML techniques in web applications
- Worked on IoT projects related to health monitoring system
- Developed custom python packages and libraries

EDUCATION / COURSES

Ph.D. in Computer Science, GPA: 4.0
University of Texas at Arlington

📅 Aug 2019 – Present

Bachelors in Electronics & Comm. Engineering
Kathmandu Engineering College, Tribhuvan University

📅 Nov 2014 – Sep 2018

PUBLICATIONS

- A Survey on Contrastive Self-supervised Learning. *arXiv preprint arXiv:2011.00362*, Nov 2020.
- A Multi-modal System to Assess Cognition in Children from their Physical Movements. In *Proceedings of the 2020 International Conference on Multimodal Interaction*, Oct 2020.
- HAND-REHA: Dynamic Hand Gesture Recognition for Game-based Wrist Rehabilitation. In *Proceedings of the 13th ACM International Conference on PErvasive Technologies Related to Assistive Environments*, June 2020.

HONORS & AWARDS

- **Graduate L3/Harris Award**, UTA Innovation Day, 2020
- **AI Scholar** in 2018 - FuseMachines, Nepal
- Awarded as an **AI-fellow** (top-25) in 2017 - (MicroMasters in AI, Columbia University, EdX)

TECHNICAL SKILLS

- **Languages/OS**: Python, JavaScript, C, Bash, Linux, MATLAB, SQL/MySQL, HTML, CSS
- **Libraries/Frameworks**: PyTorch, Keras, TensorFlow, Numpy, Pandas, Matplotlib, Scikit-learn, Django

PROJECTS

Fatigue Prediction with fMRI Images

- Built a model that predicts fatigue level of a subject with/out Traumatic Brain Injury (TBI) with 92% accuracy using brain fMRI scans.

Cognitive Assessment in Children with Action Recognition

- An end-to-end system that assesses cognition in children by analyzing their executive functions through a camera sensor
- Built a multi-modal deep learning model that measured the correctness of tasks performed by children through videos

Dynamic Gesture Recognition for Game-based Wrist Rehabilitation

- Designed a deep learning model to detect real-time dynamic gestures to control a character in the game that helps in rehabilitation of subjects with wrist injury

Mobile Autonomous Retinal Evaluation (MARVIN)

- Worked on improving the performance of a deep learning retinal evaluation system that grades diabetic retinopathy from retinal images

KrishiSathi

- A web portal for farmers integrated with Machine Learning and IoT to analyze crops and their growth daily

BP & Heart Rate Monitoring System

- A health analyst web application (Angular SPA & Django REST) powered by an IoT Blood Pressure device and machine learning

WCMS for a Juice Sales Enterprise

- Developed a data-analysis web application to manage, monitor and visualize sales in a commercial enterprise