Ronast Subedi

sronast.github.io | Google Scholar

Education

Institute of Engineering, Pulchowk Campus — Lalitpur, Nepal
Bachelor of Computer Engineering: 79.44% aggregate — *Nov. 2016 – 2021*

Budhanilkantha School — Kathmandu, Nepal
*GCE Advanced Level: 4A** — *June 2013 – 2015*

Experiences

Research Assistant — April. 2021 – Present
NAAMII — *Baluwatar, Kathmandu*

- Participated and won FetReg 2021 challenge at MICCAI 2021
- Assisting supervisor in: running experiments, tracking results, and disseminating research outcomes
- Attended ICASSP-2021 conference, PAISS-2021 summer school, and NWMLDS-2021 workshop(as a project mentor)
- Co-Supervising two undergraduate students(interns)
- Administrating the server and the website of the organization

Computer Vision Research Engineer — April. 2021 – Present
Redev Technology — *London, UK*

- Working on a fully pipe-lined (data acquisition, preparation, model training, and optimization) deep learning project for smart city
- Implemented SOTA Active Learning algorithms in classification and defection tasks to reduce the cost of data annotation in specific industrial projects
- Continuous communication, both written and verbal, with supervisor and colleagues to address client's requirements and disseminate current progress and results

Research Intern — Apr. 2020 – Dec. 2020
NAAMII — *Kathmandu, Nepal*

- Learned the fundamentals of Machine Learning and Deep Learning
- Performed fundamental research on Generative Adversarial Networks (GAN)
- Participated in paper reading sessions, ML workshops, and trainings

Software Developer Intern — May. 2019 – Nov. 2019
UBL R&D Center — *Lalitpur, Nepal*

- Developed a full-stack ML-powered web application for Image Tagging
- Learned to containerize services using Docker

Publications

- Binod Bhattarai, **Ronast Subedi**, Rebati Raman Gaire, Eduard Vazquez, Danail Stoyanov. **Histogram of Oriented Gradients Meet Deep Learning: A Novel Multi-task Deep Network for Medical Image Semantic Segmentation**
  arxiv, *Medical Image Analysis Journal* (under review)
- **FetReg2021: A Challenge on Placental Vessel Segmentation and Registration in Fetoscopy**
  arxiv, *Medical Image Analysis Journal* (under review)
- R. R. Gaire*, **R. Subedi***, A. Sharma, S. Subedi, S. K. Ghimire and S. Shakya. **GAN-Based Two-Step Pipeline For Real-World Image Super-Resolution**
  ICT with Intelligent Applications (pp. 763-772). Springer

Projects

Real-World Image Super-Resolution using GAN
Python, Flask, ReactJS, Pytorch, Google Colab — Dec. 2019 – March 2021

- This project implements two GAN networks to enhance the resolution of real-world low-resolution images by the scale factor of 4.
- Developed a full-stack web application to serve the trained model using Tensorflow Serving with Docker.

Web-based, AI-assisted Image-Tagging Tool
Python, Django, JavaScript, Tensorflow, Git — May 2019 – July 2019

- Web based application for creating labeled datasets required in deep learning. This application reduces the human effort during image annotation by auto-suggesting labels in the ROI of images leveraging CNN.

Document Generation and Management software for Department Programs
Python, Django, JavaScript, MySQL, Git Dec. 2018 – March 2019

- A complete web based tool for maintaining database of programs, faculties and students of a department and assisting in preparing documents related to departmental tasks.
- This project is currently being used by MSc Program Coordinators at DOECE, IOE, Pulchowk Campus.

Achievements

Winner. MICCAI FetReg 2021 Challenge for Placental Vessel Segmentation Task
Accepted at PRAIRIE/MIAI Aritificial Intelligence Summer School, 2021 with full scholarship
Accepted to t TU-STIP scholarship for excellent academic performance in IOE, Pulchowk Campus
Outstanding Cambridge Learner Award, Nepal for obtaining highest marks in Physics in GCE A-Level Examination
Gold accolade in IYMC organized by City Montessori School, Lucknow
2nd runner-up in Vector CTF, Nepal

Technical Skills

Languages: Python, JavaScript, SQL, C/C++, Matlab
Data Science: Pandas, NumPy, Matplotlib, Seaborn, Tensorflow, Pytorch, scikit-learn
Developer Tools: Git, Docker, LateX
Frameworks and Libraries: Django, Flask, ReactJS
Miscellaneous: Mathematics, Statistics, Calculus, Data Structure, Computer Networks, Linux OS, Bash Scripting, PrivEsc

Training & Certifications

Attended PRAIRIE/MIAI Aritificial Intelligence Summer School, 2021
Attended Third Nepal Winter School in AI, 2021
Deep Learning Specialization: Deeplearning.AI, Coursera
Mathematics for Machine Learning Specialization: IMPERIAL COLLEGE LONDON, Coursera
Machine Learning Course offered by Stanford University: Coursera
Linear Algebra by Prof. Gilbert Stran: MITOpenCourseWare

Extra-Curricular Activities

Project Mentor
4th NATIONAL WORKSHOP ON MACHINE LEARNING & DATA SCIENCE, Nepal

- Taught students about the fundamentals of Computer Vision
- Guided 6 students on Computer Vision projects: Handwritten Character Recognition and Cloth Recognition

Instructor
LOCUS, National Technical Exhibition, IOE Pulchowk Campus

- Volunteered as a Software Instructor to help junior students excel in programming skills
- Organized IDEACAMP event

Nephack3.0
Cynical Technology Pvt. Ltd.

- Led a team of 4 members in Nephack3.0 organized by Cynical Technology

Phewa School
Instructor

- Helped students of Phewa School in their academics during the COVID lock-down(1st phase) period

Pulchowk Football Club
IOE, Pulchowk Campus

- Participated, won & organized different inter-college football tournaments