Ranjai Baidya

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EXPERIENCE

- **Kpro System, Seoul, South Korea**
  AI Researcher   *2022/09 - Present*
  - : Developed an object detection model for images captured using drones.
  - : Built a vision-based safe autonomous landing system for a large drones.
  - : Developed a software that runs on the Ground Control System (GCS) for controlling and monitor drones.
  - : Customized Ardupilot firmware and Mission Planner software as per company needs.

- **PRML Lab, Gachon University, Seoul, South Korea**
  Research Assistant   *2020/09 - 2022/08*
  - : Developed a multivariate time series forecasting model.
  - : Created a golf ball tracking system using monocular videos of golf shots.
  - : Performed literature reviews to be used on proposals of lab projects and grants.
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- **NIC Asia Bank, Kathmandu, Nepal**
  IT Assistant   *2019/03 - 2020/09*
  - **Oracle Database**: Manage the database of the bank and generate necessary reports from the database.
  - **Core Banking System Software**: Maintain the Core Banking System Software and provide support to the staffs of the bank to use the software.
  - **End of the Day Processes**: Creating and maintaining scripts for the end of the day processes like: interest calculation. Perform end of the day processes like running the scripts, and backing up the database.

- **Vianet, Jawalkhel, Nepal**
  Jr. Network and Monitoring Executive   *2018/08 - 2020/02*
  - **Network Management**: Manage the network of the ISP and modify it as per necessity.
  - **Network devices configuration**: Configure routers and switches for deployment throughout the ISP network.
  - **Network Monitoring**: Monitoring the ISP network for anomalies to prevent and reduce downtime.

EDUCATION

- **Gachon University**   Seongnam, South Korea
  Master of Engineering, Department of AI. Software; GPA:4.44/4.5   *2020/07 - 2022/08*
  Thesis Title: Long Sequence Time Series Forecasting Using Spectral ConvMixer Alongside Weak-stationarizing and Non-stationarity Restoring Blocks

- **Kathmandu University**   Kavre, Nepal
  Bachelors of Engineering, Department of Electrical and Electronics Engineering; GPA:3.23/4   *2014/07 - 2018/12*
  Thesis Title: A Study to Minimize the Effects of Blackhole Attack in Mobile Ad-Hoc Networks

SKILLS SUMMARY

- **Programming Languages**:   Python, C, C++, Matlab, SQL
- **Frameworks**:   Pytorch, Keras, TensorFlow, OpenCV, Scikit Learn, Dronekit, Pymavlink, Numpy, Pandas, Matplotlib, Cx-Freeze
- **Tools**:   Docker, GIT, Slack, ROS, Toad, Ardupilot, Mission Planner, QGround Control, Qt Designer
- **Platforms**:   Linux, Windows, Nvidia Jetson, Arduino, Raspberry
- **Languages**:   Nepali(Native), English(TOEFL:109), Korean(Beginner), Hindi(Fluent Spoken), Newari(Native)
- **Others**:   Microsoft Office, Latex

PROJECTS

- **Drone Precision Landing System**: Design and implementation of vision based precision landing system for large drone using a Jetson board as the companion computer. (2022/06 - 2023/05)
- **Time Series Forecasting**: Development of a multivariate time series forecasting model using deep learning. (2021/07 - 2022/06)
- **Golf Ball Tracking**: Utilizing computer vision techniques to track a golf ball and draw its trajectory. (2020/09 - 2021/06)
- **Health and Position Tracker**: Design and implementation of a device that constantly monitors pulse rate and body temperature of the user and notifies the concerned person if any anomalies are observed. (2016/07 – 2017/06)

Publications

- **Baidya, Ranjai, and Heon Jeong.**: "YOLOv5 with ConvMixer Prediction Heads for Precise Object Detection in Drone Imagery." Sensors 22.21 (2022): 8424.
- **Baidya, Ranjai, and Heon Jeong.**: "Anomaly Detection in Time Series Data Using Reversible Instance Normalized Anomaly Transformer." Sensors 23.22 (2023): 9272.

Honors and Awards

- Excellent paper among papers (oral) - 2020 Korean Society for Next Generation Computing Spring Conference (2022/05/20)

- Excellent paper among papers (posters) - 2021 Korean Society for Next Generation Computing Spring Conference (2021/05/15)