SOHIL LAL SHRESTHA

15705 Quorum Dr, Addison, TX 75001 | +1-817-557-7646 | sohail.stha@gmail.com | https://50417.github.io/

EDUCATION

- **University of Texas, Arlington, Arlington, Texas** 2017 - May 2023 (Expected)
  PhD Candidate in Computer Science CGPA: 4.00
- **Kathmandu University**, Dhulikhel, Nepal 2012 - 2016
  Bachelor of Engineering in Computer Engineering CGPA: 3.85

AWARDS AND HONORS

CodePath National Demo Day Top 5 iOS App Finalist *2021*
Ncell App Camp Tourism Category Winner[1] *2015*
Merit based Scholarship, Kathmandu University *2013-2016*
Dean's list, School of Engineering, Kathmandu University *2013-2016*

TECHNICAL SKILLS

- **Language:** Java (Proficient), Python (Proficient), C/C++, Matlab, php
- **Databases & Frameworks:** SQL, Oracle, Vertica, REST, MVC, React, Django, Presto, Hack
- **Build/VCS Tools:** Mercurial, Maven, Git, SVN
- **Tools & Libraries:** TensorFlow, Keras, Numpy, MatplotLib, Eclipse, Pycharm, VS Code, Jira, Anaconda

INDUSTRY EXPERIENCE

Meta | Software Engineer Intern *May 2022 to August 2022*

- Designed and implemented dynamic step size algorithm of log barrier method based budget pacing system. Improved the budget pacer error rate from 1.5% to 0.007%
- Built new visualization tools and simulator to analyze issues relating to optimization of budget pacer.
- Designed and implemented an end-to-end A/B testing of budget pacing system.

Atos Syntel | R&D Machine Learning Intern *May 2021 to August 2021*

- Prepared dataset and trained Google AutoML object detection model achieving 90% precision and recall.
- Applied BERT based contextual spell correction on optical character recognition's output along with heuristic based correction. The approach produced 95% good sentences based on metric using Levenshtein ratio.
- Developed a web application using React and Django to visualize inference from deep learning models

Cotiviti Nepal Pvt. Ltd. | Intern/Associate Software Engineer *July 2016 to May 2017*

- Performed root cause analysis on production issues to reduce clients' downtime.
- Collaborated with senior member to reduce team's backlog by 50% involving Vertica SQL exception.

RESEARCH EXPERIENCE

Graduate Research Assistant, University of Texas at Arlington *Fall 2017 - Present*

- Led a NSF funded project to test cyber-physical development toolchain using deep learning. The tool found a bug missed by current state of the art fuzzer.
- Proposed and developed an approach to learn specification of dataflow programming language (aka MATLAB/Simulink) using LSTM architecture to automatically generate Simulink models.
- Proposed a transfer learning approach leveraging large pre-trained language model (GPT-2) for random Simulink model generation with high fidelity to training dataset and more bug finding capability than state of the art approach.
- Developed a fully automated tool to mine Simulink models from open source repositories. The tool alleviated non-trivial overhead of mining the repositories to sample Simulink models from open source projects
- Curated a dataset of Simulink models called SLNET which is 8 times larger than previous collections. Extracted and analyzed the Simulink model metrics to visualize modeling practices useful for future studies and tool development.

[1] Nepal's annual national level competition