Angel Zenteno

Research Assistant

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Summary

I am excited to think about what can be accomplished by combining human intelligence and computers. Very passionate about science and I am currently working as a research assistant in a computer science lab.

Education

UPB(Universidad Privada Boliviana) *Cochabamba, Bolivia*

B.S. in Computer Systems Engineering *Feb. 2017 - Jul. 2021*

- Graduated with honors, Summa Cum Laude.

Experience

UPB (Universidad Privada Boliviana) *Cochabamba, Bolivia*

Research Assistant *Jun. 2021 - Present*

- Data collection, processing, and implementation of a recurrent neural network for automatic spectrometer calibration using TensorFlow.
- Data collection, processing, and implementation of a convolutional neural network for automatic detection of chemical elements with TensorFlow. Fine-tuned an Efficient Det model.
- Implementation of a spectrometry application for mobile phones using Flutter and deployment of TensorFlow Lite models.
- Development of a distributed GitHub scrapper used to massively retrieve and analyze open source code repositories.
- Development of REST API using Django for a spectrometry remote lab, this allows users to visualize the experiments with a web camera, manipulate remotely the spectrometer, and collect spectral data

Truextend *Cochabamba, Bolivia*

Software Engineer Intern *Jul. 2020 - Aug. 2020*

- Deployment of internal applications using Docker and GitLab CI/CD.
- Implementation of animations using Angular and SASS.

Publications

CINTI - Research Center for New Computer Technologies

- Zenteno, A., Orellana, A., Villazon, A., Ormachea, O. Automatic selection of reference lines for spectrometer calibration with Recurrent Neural Networks. **(Work in progress, not published)**
- Ormachea, O., Villazon, A., Orellana, A., Zenteno, A. A low-cost 3D-printed spectrometer based on Raspberry Pi. **(Work in progress, not published)**
- Villazon, A., Ormachea, O., Zenteno, A., Orellana, A. (2023). A Low-Cost Spectrometry Remote Laboratory. In: Auer, M.E., El-Seoud, S.A., Karam, O.H. (eds). REV 2022. Lecture Notes in Networks and Systems, vol 524. Springer, Cham.
- E. Rosales et al., "Characterizing Java Streams in the Wild," 2022 26th International Conference on Engineering of Complex Computer Systems (ICECCS), 2022.

Projects

NASA Space Apps Challenge

- Development of a web platform to explore papers published by NASA, we used a large language model to summarize more than 300.000 papers. Implemented a semantic search engine converting summaries into embeddings. These were also used to visualize papers as connected graph.

"Dive into Reading" Hackathon

- Development of a virtual reality video game to encourage reading, we use language models to generate quizzes of any reading in books.

Honors & Awards

2022 **Winner**, NASA Space Apps Challenge Bolivia. Challenge "Can AI preserve our science legacy?"

2022 **Finalist**, "Dive into Reading" Hackathon, organized by the Embassy of the United States in Bolivia.

2021 **Winner**, graduation with honors, Summa Cum Laude.

2021 **Winner**, excellence scholarship, granted to top 3 best students in the engineering faculty.

Skills

Python, SQL, git, sklearn, NumPy, Pandas, PyTorch, TensorFlow, Django, Flutter, MQTT and Docker.