Li-Yin Young

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Education

University of Colorado Boulder 2018-2020
Master of Science in Applied Mathematics *Boulder, CO*

University of Colorado Boulder 2013-2015
Master of Science in Computer Science *Boulder, CO*

Experience

Cooperative Institute for Research in Environmental Sciences Boulder, CO
Software Engineer *April 2021 - Present*

- Supervising three software developers and mentoring them to become proficient in Git, unit testing, and server and network management.
- Led the engineer team to develop Python libraries for geomagnetic models. Each magnetic model shared the same upstream libraries but has its own API and Git version control.
- Managed two open-source Git repositories. Responsible for verifying pull requests from external users and deciding whether to merge them.
- Update the dependency of machine learning backend from Python2 to Python3 with unittest and replacing LSTM layer with GRU with tensorflow. Deploy the updated ML backend to Google Cloud Platform. The RMSE of new ML backend decrease 50%.
- Led the software development for the NCEI's geomagnetic models: HDGM.
  * Designed, deployed, and maintained the web API component of HDGM using Java Servlet. The backend is capable of running in a cloud-based environment and includes APIs for high-resolution models.
  * Developed and deployed a logging tool to track user requests, user IPs, and server responses for the HDGM web API by Mockito and Java Serlvet.
  * Deployed a machine learning model to the backend of a cloud-based web service.
- Led the software development for the NCEI's geomagnetic models: WMM online calculator, WMM Python API, WMM C softwares and WMM GUI.
  * Deployed the WMM high-resolution model to the current backend of the WMM online calculator, WMM C software, and WMM GUI.
  * Collaborated with the NCEI IT team to develop the CI/CD process for the WMM online calculator, enabling deployment of the model backend, web API backend, and frontend to production.
  * Led the team in transitioning the backend from C to a Python API. Integrated components from data preprocessing to the model into the Python API and deployed it across development, testing, and production tiers.
- Updated the shared library for the software backend of geomagnetic models, such as HDGM and WMM, to comply with the requirements of the NCEI IT security review.
- Develop tools for logging server response and customer request for web-api product by Mockito and Java Servlet.

Main Street Exchange Boulder, CO
Full Stack Developer *Jun 2016 - May 2016*

- Implemented scripting tools and virtual server environments to troubleshoot real-time system issues.
- Developed major functionality on the website's portal including third-party app integration and database management.

Topic Technology Boulder, CO
Machine Learning Developer *Jan 2016 - May 2016*

- Built software tools for extracting unstructured sentimental information from social media for training machine learning model.

Millennium Venture Systems Colorado Spring, CO
Machine Learning Engineer Internship *Jul 2014 - Aug 2014*

- Built the support vector machine(svm) application on time series prediction with C++.

Skills

Programming Languages: Python, C, C++, Java, MySQL, shell script
Development Frameworks:Tensorflow, Docker, GCP, Git

References

[1] Manoj Nair, Rob Redmon, Li-Yin Young, Arnaud Chulliat, Belinda Trotta, Christine Chung, Greg Lipstein, and Isaac Slavitt. Magnet—a data-science competition to predict disturbance storm-time index (dst) from solar wind data. *Space Weather*, 2023.

[2] Li-Yin Young. The effect of moderator bots on abusive language use. In *Proceedings of the International Conference on Pattern Recognition and Artificial Intelligence*. Association for Computing Machinery, 2018.