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Jianhai Su

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Skill Set

- **Programming Languages**: Python, C++, Java, Bash, PLEXIL, SQL
- **Python Library**: Tensorflow, Keras, PyTorch, BoTorch, Transformers
- **Tools**: Git, Docker, Visual Studio, Jenkins
- **Robotics**: Gazebo, ROS

Work Experience

- *Software Engineer II*   **Synopsys**, Seattle, WA   Worked in Language Frontier Team   Feb. 2016 ~ June 2017
  - Enabled Coverity to support JavaScript ES 6 and Swift 3 by translating their abstract syntax trees into a unified structure.
  - Implemented a SpiderMonkey-based minification detection to sort out minified JavaScript files. (**C++/Linux**)
- *Software Engineer*   **Intel Security**, Denver, CO   Worked in SaaS Email Protection Team   July 2014 ~ Jan. 2016
  - Worked with QA leader to write test plans for new features for the SaaS Email Protection product.
  - Developed front-end and back-end test automation for features and hot fixes. (**Perl/Python/Linux/WebDriver**)

Research Experience

- University of South Carolina, Columbia, SC, USA   Working with Dr. Qi Zhang   May 2022 ~ Present
  - Working on the modeling of intra-agent speech using a vision language model to enable the agent to effectively propose a critical subtask and discover a pre-trained promising skill for solving it. (**Python/Pytorch/Transformers**)
- University of South Carolina, Columbia, SC, USA   Worked with Dr. Pooyan Jamshidi   Jan. 2019 ~ May 2022
  - Worked on NASA RASPBERRY SI project to implement a MAPE-K based autonomy to enable the Europa Mission lander in the OceanWATERS testbed quickly self-adapt to uncertainties. (**C++/Python/ROS/PLEXIL/Prism/Docker**)
  - Created a many-weak-defense based framework, ATHENA, to fight against adversarial examples (**Python/Keras**)
- University of South Carolina, Columbia, SC, USA   Worked with Dr. Qiang Zeng   Aug. 2018 ~ Dec. 2018
  - Built a system to detect audio adversarial examples based on similarity dispersion of its transcriptions recognized among different automatic speech recognition systems. (**Python/Linux**)
- Michigan Technological University, Houghton, MI, USA   Worked with Dr. Timothy Havens   Sept. 2012 ~ April 2014
  - Proposed several heuristic algorithms for fuzzy community detection by applying convex optimization, fuzzy k-mean clustering and genetic algorithm to maximize modularity of found partition. (**MATLAB/C++**)

Education

- PhD in Computer Science at University of South Carolina, Columbia, SC, USA   Aug. 2018 ~ Present
- M.S. in Computer Science at Michigan Technological University, Houghton, MI, USA   Sept. 2011 ~ May 2014
- M. Eng. in Software Engineering at Tongji University, Shanghai, China   Sept. 2008 ~ June 2011
- B.S. in Information Science (**Honor Program**) at China Agricultural University, Beijing, China   Sept. 2005 ~ June 2008

Publications

- Iqbal, M.S., Su, J., Kotthoff, L. and Jamshidi, P., 2022, April. Getting the Best Bang For Your Buck: Choosing What to Evaluate for Faster Bayesian Optimization. In First Conference on Automated Machine Learning (Late-Breaking Workshop).
- Md Shahriar Iqbal, Jianhai Su, Lars Kotthoff, Pooyan Jamshidi. "FlexiBO: Cost-Aware Multi-Objective Optimization of Deep Neural Networks". CoRR abs/2001.06588 (2020).
- Ying Meng, Jianhai Su, Jason O'Kane, Pooyan Jamshidi. "Ensembles of Many Diverse Weak Defenses can be Strong: Defending Deep Neural Networks Against Adversarial Attacks". CoRR abs/2001.00308 (2020).
- Qiang Zeng, Jianhai Su, Chenglong Fu, Golam Kayas, Lannan Luo, Xiaojiang Du, Chiu Chiang Tan, Jie Wu. "A Multiversion Programming Inspired Approach to Detecting Audio Adversarial Examples". DSN 2019: 39-51.
- Su, J. and Havens, T.C., 2014. Quadratic program-based modularity maximization for fuzzy community detection in social networks. IEEE Transactions on Fuzzy Systems, 23(5), pp.1356-1371.
- Su, J. and Havens, T.C., 2014, July. Fuzzy community detection in social networks using a genetic algorithm. In 2014 IEEE international conference on fuzzy systems (FUZZ-IEEE) (pp. 2039-2046). IEEE.