Jin Shang

Carnegie Mellon University, Pittsburgh, PA 15213

shangjin1997@gmail.com
+1 412 478 1794

Education

- **Carnegie Mellon University** — Pittsburgh, PA
  Master of Science in Computer Science — Expected Dec. 2020
  - **QPA**: 4.00/4.00
- **New York University Abu Dhabi** — Abu Dhabi, UAE
  Bachelor of Science in Mathematics and Computer Science — Aug. 2015 - May 2019
  - **GPA**: 3.897/4.00; **Math Major GPA**: 4.00/4.00; **CS Major GPA**: 3.87/4.00; Full scholarship of $350,000
  - **Locations of Studies**: Abu Dhabi, London, New York, Shanghai
  - **Key Courses**: Abstract Algebra, Algorithm, Computer Networks, Computer Security, Data Structure, Linear Algebra, Math Modeling, Numerical Methods, Real Analysis, Software Engineering, Statistics, Theory of Computation

Publications

- Jin Shang, Muhammad Junaid Farooq, Quanyan Zhu **Real-Time Transmission Mechanism Design for Wireless IoT Sensors with Energy Harvesting under Power Saving Mode**. *arxiv:1812.02615*
- Sofiane Bouarroudj, Dimitry Leites, Jin Shang. **Computer-aided study of double extensions of restricted Lie superalgebras preserving the non-degenerate closed 2-forms in characteristic 2**. *arxiv:1904.09579*
- Sofiane Bouarroudj, Dimitry Leites, Alexander Lozhechnyk, Jin Shang. **The roots of exceptional modular Lie superalgebras with Cartan matrix**. *arxiv:1904.09578*

Internship Experience

- **Tencent Technology** — Shenzhen, China
  Software Engineer, Wechat Group — June. 2019 – August 2019
  - Conducted research on online learning algorithms and their possible applications on Wechat data analytics and recommendation functionalities
  - Developed and tested a multi-thread online recommendation algorithm using Wechat's PHXRPC
  - Implemented an online real-time recommendation algorithm for Wechat Moments on Apache-Flink based Tencent Oceanus platform with prediction and training time <1ms per data based on FTRL and LR
  - Feature vector includes user features, friend features and relationship features
  - Increased click ratio of Wechat Moments recommended entries by 20%

Research Experience

- **New York University Abu Dhabi** — Abu Dhabi, UAE
  Research Assistant, Department of Mathematics — Sept. 2017 – May. 2019
  - Designed and developed an $O(n^2)$ algorithm for computing cohomologies of Lie algebras on Mathematica
  - Computed and Classified the double extensions of several Lie algebras generated by its cohomologies and prove the generalized result on fields of characteristic 2
  - Computed the Duflo-Serganova functor for various Lie (super)algebras on algebraically closed fields of various characteristics on Mathematica

New York University Tandon School of Engineering — New York, NY
Research Assistant, Department of Electrical and Computer Engineering — June 2018 – Aug. 2018

- Designed an optimal algorithm of data transmission for micro IoT devices with limited battery, memory and computational power using dynamic programming on battery level and data retrieval
- Conducted tests to compare the algorithm with existing protocols and proved the optimality of the algorithm using mathematical analysis. The proposed optimal algorithm reduces power consumption by over 50% while gaining 3 times more utility

Awards

- **Silver Medal** *Al-Kwarizmi International Mathematical Olympiad 2018*
- **Honorable Mention** *North American Invitational Programming Contest 2018*

Skills

Technologies: Apache Flink, C/C++, Python, Mathematica, Numpy, Scala

Languages: Chinese (Native), English (Proficient)