

# Jin Shang

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## Education

- **Carnegie Mellon University** Pittsburgh, USA  
*Master of Science in Computer Science* Aug. 2019 - Dec. 2020
- **New York University Abu Dhabi** Abu Dhabi, UAE  
*Bachelor of Science in Mathematics and Computer Science* Aug. 2015 - May 2019
  - **GPA:** 3.885/4.00; **Math Major GPA:** 4.00/4.00; **CS Major GPA:** 3.85/4.00; Full scholarship of \$ 350,000
  - **Locations of Studies:** Abu Dhabi, London, New York, Shanghai
  - **Key Courses:** Abstract Algebra, Algorithm, Computer Vision, Data Structure, Linear Algebra, Math Modeling, Natural Language Processing, Numerical Methods, Real Analysis, Software Engineering, Theory of Computation
  - **Senior Thesis:** Double extensions of Hamiltonian Lie superalgebras over an algebraically closed field of characteristic 2

## Publications

- Sofiane Bouarroudj, Dmitry 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, Dmitry Leites, Alexander Lozhechnyk, Jin Shang. **The roots of exceptional modular Lie superalgebras with Cartan matrix** *arxiv:1904.09578*
- 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*

## Research Experience

- **New York University Abu Dhabi** Abu Dhabi, UAE  
*Research Assistant, Department of Mathematics* Sept. 2017 – Present
  - Supervised by Prof. Sofiane Bouarroudj and Prof. Dmitry Leites
  - Compute and classify the derivations and cohomologies of restricted Hamiltonian Lie superalgebras on field of characteristic 2 using *SuperLie* and Mathematica
  - Compute the double extensions generated by such derivations and prove the generalized result
  - Compute the Duflo-Serganova functor for various Lie (super)algebras on algebraically closed fields of various characteristics
- **New York University Tandon School of Engineering** New York, NY, USA  
*Research Assistant, Department of Electrical and Computer Engineering* June 2018 – Aug. 2018
  - Supervised by Prof. Quanyan Zhu
  - Designed an optimal algorithm of data transmission for micro IoT devices with limited battery, memory and computational power
  - Conducted tests to compare the algorithm with existing protocols and proved the optimality of the algorithm using mathematical analysis

## Intern Experience

- **Tencent Technology co. ltd** Shenzhen, China  
*Machine Learning Engineer, Wechat Group* June 2019 – August 2019
  - I will join Tencent for a summer internship developing machine learning frameworks in C++.

## Class Projects

- **NYU Class Classifier (NLP)** An automated course classifier for NYU Albert registration system based on TF-IDF
- **Scale-invariant Gender Detector** A VGG-16 based neural network that detects gender with over 95% precision

## Awards

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

## Skills

**Technologies:** C/C++, Python, Java, Mathematica, Numpy, Natural Language Toolkit, Assembly

**Languages:** Chinese (Native), English (Proficient)