**Heyu Guo**

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**EDUCATION**

**Peking University (PKU) 09/2019 – 07/2023 *(Expected)***

B.Sc. in EE (IC Design) Beijing, China

* Cumulative GPA: 3.837/4.0 | Rank: 1/27 (Major), 1/124 (Category)
* **Relevant Coursework:** *Computer Networks* (93.5), *Principle of Communications* (Honor Track) (91), *Digital System Design based on HDL* (96), *Introduction to Artificial Intelligence* (95), *Signal Processing and Systems* (99), *Digital Logic* (99), *Analog Circuits* (95), *Computer Architectures* (91.5), *Operating System* (92), *Probability Theory and Statistics*(A) (97), *Data Structure and Algorithm* (93), *Practice of Programming in C and C++* (93)

**HONORS**

**National Scholarship** (Ministry of Education, top 0.1% in academic performance) **2022**

**Merit Student Pacesetter** (PKU, top 0.1% in comprehensive quality) **2021 & 2022**

**May 4th Scholarship** (PKU, top 0.1% in scientific research) **2021**

**Excellence in Study Award** (PKU, top 20% in academic performance) **2020**

**PUBLICATIONS**

**RF-CHORD: Towards Deployable RFID Localization System for Logistics Network**

*Accepted for NSDI ’23*

Bo Liang, Purui Wang, Renjie Zhao, Heyu Guo, Pengyu Zhang, Junchen Guo, Xinyu Zhang, Chenren Xu

**RESEARCH EXPERIENCE**

**Radar Tracking and Mapping 09/2022 – 12/2022**

**University of Illinois Urbana-Champaign Wireless Networks Lab**

* Inferred radar parameters from paper, GitHub and author; reproduced baselines using own data.
* Concluded failure modes and introduced attention mechanism in deep learning to increase accuracy of the worst case by nearly 50%.

**RFID Localization and Tracking 04/2022 – 08/2022**

**Peking University SOAR Lab**

* Designed experiment to identify error sources; discovered and suppressed electromagnetic interference and multipath effect to reduce localization error by 80%.
* Designed equipment to accurately control orientation and motion of RFID tags with precision of 1° and 1mm, respectively.
* Wrote code to automatically generate and gather trace data; collected fine-grained data in 5m×5m space.
* Analyzed tracking data features, implemented algorithms and achieved 4x and 2x tracking accuracy compared to baseline hologram using Hidden Markov model and convolution neural network, respectively.

**SF-Free ADR LoRa 03/2022**

**Peking University SOAR Lab**

* Clarified sentence logic, improved paper organization, identified research highlights and provided eye-catching design for system overview figures and experimental results.

**Chia Coin performance 09/2021 – 12/2021**

**Peking University Storage Lab**

* Analyzed tens of thousands of lines of Chia Coin source code; interjected test parts to measure total running time for all steps.
* Discovered relationships between operating time and parameters and accelerated computing process.

**Device Simulation 05/2021 – 07/2021**

**Peking University SOI Lab**

* Employed response surface model, designed Python program for numerical computing and reduced number of experiments.

**COURSE PROJECTS**

**Maze Robot | *Introduction to Artificial Intelligence* 03/2021 – 06/2021**

* Collected data from multiple sensor types, completed high-speed transfer to PC, obtained maze terrain and localized E-puck robot with accuracy of 5cm.
* Introduced feedback to improve 5x accuracy of robot motion.
* Designed algorithms with Monte-Carlo and CNN for pathfinding, reducing pathfinding time by 80% compared to baseline.
* Visualized maze map and robot trace using MATLAB and developed user-friendly interface using Pygame.

**EXTRACURRICULAR ACTIVITIES**

**Public research introduction, EECS Student Union 09/2019 – 06/2020**

* Interviewed department lab and wrote articles detailing research achievements for more than 1,500 readers.
* Organized academic lectures as member of EECS Student Union, reaching more than 500 students.

**SKILLS**

* **Languages:** Mandarin (native), English (TOEFL: 105/120; GRE: 336/340)
* **Programming:** C, C++, Python, MATLAB, Verilog
* **Software:** Candence, SPICE, Vivado, ModelSim, HFSS, SOLIDWORKS, Wireshark, Overleaf, GnuPlot, Webots, Stata
* **Frameworks/Platforms:** PyTorch, TensorFlow, GitHub, Linux, Arduino, Cloud, GitBook, ROS
* **Soft Skills:** Leadership, event management, writing, public speaking, time management