Zikai Sun

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Education

- **South China University of Technology** — Guangzhou, China
  B.S. in Information Engineering (In the Elite Class) — *Sep. 2015 – Present*
- **Rutgers, The State University of New Jersey** — New Jersey, U.S.
  Courses in Engineering; — *Jul. 2017 – Aug. 2017*

Research

- **Zikai Sun**, Dezhi Peng, Zirui Cai, Zirong Chen, Lianwen Jin, "Scale Mapping and Dynamic Re-detecting in Dense Head Detection", In 2018 25th IEEE International Conference on Image Processing (ICIP) (pp. 1902-1906). IEEE. [pdf]
- Dezhi Peng*, **Zikai Sun***, Zirong Chen, Zirui Cai, Lele Xie, Lianwen Jin, "Detecting Heads using Feature Refine Net and Cascaded Multi-scale Architecture", Accepted by 2018 24th International Conference on Pattern Recognition (ICPR 2018)[pdf] (*indicates equal contribution)

Patent: "A small human head detection method based on deep learning", Chinese, 2018108002145, CN109190458A

Honors and Awards

- **National Scholarship** (**Highest** national wide scholarship for undergraduate students in China), 2018
- **National First Prize**, China Undergraduate Mathematical Contest in Modeling, **(#1/162 teams)**, 2017
- **First Prize**, SCUT Mathematical Modeling Competition, **(#1/225 teams)**, 2017
- **Principal Investigator**, National Undergraduate Scientific and Technological Innovation Project, 2017
- **Honorable Mention**, Mathematical Contest in Modeling & Interdisciplinary Contest In Modeling, 2017
- **Second Prize**, SCUT scholarship, 2017; **First Prize**, SCUT scholarship, 2016

Selected Experiences and Projects

- **Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences (CAS)** — Shenzhen, China
  Research Intern — *Dec. 2018 – Feb. 2019*
  - Participate the project TIA / Minor Stroke risk recurrent prediction, cooperate with the Department of Medicine and Therapeutics at the Chinese University of Hong Kong, responsible for the algorithm part.
  - Doing the statistic analysis and processing with the original 1074 patients returning case samples such as data filling, SMOTE upsampling, correlation analysis, etc.
  - Tried several machine learning algorithms such as the SVM, gcForest, GBDT, DNNs. The final prediction algorithm reached 73% in accuracy.
- **HCII-lab, South China University of Technology** — Guangzhou, China
  Research Assistant — *Mar. 2017 – Apr. 2018*
  - As the team leader, held the project *"A method of counting number in classroom based on deep learning"*, which obtained CNY$10,000 research funding.
  - Self-studied "Stanford CS231n: Convonlutional Neural Networks" course, finished all assignments, coded CNNs and RNNs from scratch.
  - Contributed two deep learning algorithms in head detection task, achieved the state-of-the-art performance.
  - Developed a software with team members that can detect and count heads in surveillance videos or image on Qt platform.
- **Rutgers, The State University of New Jersey** — New Jersey, U.S.
  International exchange student GPA: 4/4 — *Jul. 2017 – Aug. 2017*
  - Robot control based on Raspberry Pi and sensor intelligence algorithm. Implemented algorithms such as object tracking, obstacle avoidance, PID algorithm, Breadth-First Search algorithm, Pure pursuit algorithm, etc.
  - Studied two course: *"Introduction to 21st Century Engineering"* and *"Introduction to Robotics"*, both achieved A grades.
- **Facial expression DIY Software**: An android-based application combined the method of Generative Adversarial Networks.
- **Search engine website**: A whole-network search engine that realized by python and Flask framework.

Others

- **Activities**:
  - **Volunteer**, in Huizhou Centre Primary School, Taught children "Funny electronic" course, brought them to the world of technology. Help local villagers repair electrical appliances.
  - **Ministers**, Student Union of Electronic Engineering.; **Commissary in charge of organization**, in class.
- **Programming**: Proficient in C/C++, Python, Matlab, VHDL, assembly language. Toolkits: Caffe, Tensorflow, pyTorch