

Yuze Song

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EDUCATION

- **University of California, San Diego (UCSD)** La Jolla, CA
Master of Science in Electrical and Computer Engineering Sep 2021 - Present
GPA: 3.7/4.0
Courses: Statistical Learning (A), Information Theory (A), Digital Image Processing (A), Linear Algebra and Application (A+)
- **Zhejiang University (ZJU)** China
Bachelor of Science in Information and Engineering Sep 2017 - Jun 2021
Overall GPA: 3.68/4.0; Last 60 GPA: 3.80/4.0
Courses: Signals and Systems (94/100), Digital Signal Processing (89/100), Information, Control & Computing (86/100), Principles of Communications (91/100), Artificial Intelligence (92/100)

RESEARCH EXPERIENCE

- **Bird's-Eye View (BEV) Perception with Monocular Images** Jun 2022 - Present
A summer research internship project advised by Prof. Nuno Vasconcelos Statistical Visual Computing Lab, UCSD
 - **Conducted thorough reviews on state-of-the-art methods in monocular 3D/BEV object detection:** Categorized prior works into representation transformation, 2D detection, and 3D proposal generation based methods.
 - **Developed a novel dual-branch Transformer architecture for cross-view perception:** Leveraged key points (e.g. head and feet locations for pedestrians) in image view to guide the perception in the bird's-eye view.
 - **Implemented the training framework and conducted extensive experiments:** Conducted experiments on different variants of the network with the widely adopted KITTI3D dataset and analyzed their performance.
- **Space-Time Adaptive Processing (STAP) with Coprime Arrays and Samplers** May 2020 - Mar 2021
A research project led by Prof. Chengwei Zhou Zhejiang University
 - **Developed a STAP algorithm with coprime arrays and coprime samplers that can achieve competitive performance with less array elements and less sampling rates:**
 - Realized the joint angle-doppler estimation algorithm with coprime arrays and coprime samplers with MATLAB.
 - Studied several beam-forming algorithms in the literature and realized these algorithms with MATLAB implementations.
- **COVID-19 Computational Challenge co-hosted by Los Angeles City and RMDS Lab** May 2020 - Jun 2020
A competition cooperated with University of Michigan and guided by Prof. L. Jay Guo University of Michigan
 - **Developed a machine learning algorithm to analyze the efficiency of the policies about the COVID-19:**
 - Leveraged Long Short Term Memory (LSTM) and linear regression models.
 - Collected and cleaned the daily Covid-19 cases data of various areas in Los Angeles.
 - Used R-shiny to create a website to demonstrate the visualization of our results.

ACADEMIC PROJECTS

- **Covid-19 Classification Based on Deformable Convolution** May 2020 - June 2020
A course project of Artificial Intelligence Zhejiang University
 - **Developed a deep learning method to identify the COVID-19 and community-acquired pneumonia:**
 - Summarized several state-of-the-art methods on COVID-19 image classification like Covid-net and Covid-next
 - Applied deformable convolution in the algorithm to enhance the transformation modeling capacity of CNN

HONORS AND AWARDS

- The Third Prize University Scholarship (Top 15%) 2019 - 2020
- Model Student of Academic Records (Top 25%) 2019 - 2020

SKILLS

- **Languages:** Chinese (Native), English (TOEFL: 106(S 24), GRE: 324+3.5)
- **Programming and simulation:** Python (fluent), C/C++ (proficient), MATLAB (fluent), Verilog (prior experience), R (prior experience), ADS (prior experience)
- **Machine Learning:** Pytorch, OpenCV
- **Data Science:** NumPy, Pandas, Scipy, Matplotlib