

Siddarth Chandrasekar

Website: siddarth-c.github.io

Email: siddarhc2000@gmail.com

Education

- **Indian Institute of Information Technology, Design and Manufacturing** Kancheepuram, India
Bachelor of Technology in Electronics and Communication Jul 2018 - Present
 - Supervisor : [Dr Priyanka Kokil](#)
 - Cumulative GPA : 8.5/10
- **Maharishi Internation Residential School** Sriperumbudur, India
Higher Secondary School Jul 2014 - May 2018
 - Higher Secondary Percentage : 92%

Work Experience

- **SPIRE Laboratory, Indian Institute of Science** Bangalore, India
Speech Processing - Research Intern May 2021 - Present
 - Supervised by [Dr Prasanta Kumar Ghosh](#)
 - Studied the influence of formant transitions in the perception and classification of stop consonants
 - Established the large influence of formant deviations from template on the machine learning classifiers
 - Currently working on articulatory-to-acoustic inversion and the visualisation of the midsagittal plane of the mouth during speech production
- **Indian Institute of Technology** Patna, India
Natural Language Processing - Research Intern Mar 2021 - Nov 2021
 - Supervised by [Dr Sriparna Saha](#)
 - Devised a novel double-sided adaptive optimization federated learning algorithm
 - Achieved better results (3% increase in macro-F1) compared to contemporary federated algorithms
 - Employed Prototypical Networks for complaint identification in a limited-data federated setting
- **Qantrium Tech.** Chennai, India
Computer Vision - Industrial Intern Nov 2020 - Jan 2021
 - Developed a document analyzer for India's first ever OCR for Bank Passbooks
 - Redesigned the pre-processing pipeline using Facebook's Detectron2 and the Hough Transform algorithm leading to a 75% faster processing speed
- **SRIP, Indian Institutes of Information Technology** Hyderabad, India
Software Development - Intern Nov 2020 - Jan 2021
 - Developed an open sourced web-based application for the Computer Graphics department's Virtual-Lab
 - Created a 3D environment employing HTML, CSS and JS, to visualize and interact with 3D points and shapes

Skills and Interests

- **Languages:** C, Python, MatLab
- **Frameworks:** PyTorch, Matplotlib, Numpy, Scikit-Learn, Pandas, spaCy
- **Interests:** Reinforcement Learning, Language Processing

Publication

- C Siddarth, Arvind Ramesh, Tilak Purohit, Prasanta Kumar Ghosh - **A Study on the importance of formant transition for stop-consonant classification in VCV Sequence ***
Submitted to *ICASSP 2022: International Conference on Acoustics, Speech and Signal Processing*
- Apoorva Singh, C. Siddarth, Tanmay Sen and Sriparna Saha - **FedCI-GAT: Federated Multi-task Learning for Complaint Identification using Graph Attention Network ***
Submitted to *IEEE Transactions on Affective Computing*
- A. Navaas Roshan; B. Gokulapriyan; C. Siddarth; Priyanka Kokil - **Adaptive Traffic Control With TinyML**
Presented in *2021 Sixth International Conference on Wireless Communications, Signal Processing and Networking (WiSPNET)*

Course work

- Data Structures and Algorithms
- Pattern Recognition
- Data Communication Networks
- Digital Image Processing
- Calculus
- Linear Algebra
- Computational Engineering
- Introduction to Machine Learning
- Microprocessors and Computer Architecture
- Probability Theory
- Differential Equations
- Discrete Mathematics

Projects

- **FedGMA** | Federated Learning  Aug 2021
- **Black Box Meta Learning** | Meta Learning  Jul 2021
- **Graph Chess** | Graph Neural Networks  Jun 2021

Visit this [link](#) for a comprehensive view of my projects

Extra Curricular

- Semi-finalist of Samvedan, Grand Challenge Competition organized by Sony India and IIT-Madras Oct 2021
- Presented a paper on Articulatory-Acoustic Inversion (AAI) in Lab Talks, SPIRE Lab, IISc Bangalore Sep 2021
- Member of a non-profit organization, Vidhai, en route to educate the poor Jul 2021
- Served as the Core of the Electronics Design Club, IITDM Jul 2019
- Member of inter-college's Chess team Jul 2019
- Won second place in REimagiNEWaste 4, a hackathon conducted in IIM Bangalore Dec 2019
- Won special mention in Startup Week-end Hackathon conducted by Google in CEG Chennai Feb 2019

* Paper available upon request