

# Rupa Kurinchi-Vendhan

## Aspiring Machine Learning Researcher for Sustainability and Social Good

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A second-year undergraduate computer science student seeking opportunities to utilize machine learning, research skills, and a passion for problem-solving to combat the climate crisis.

## Education

### Bachelor of Science

#### The California Institute of Technology

📅 September 2020 – Ongoing    📍 Pasadena, California

- Major: Computer Science, Intended Minor: Environmental Science and Engineering
- GPA: 4.2/4.0
- Related Courses: Introduction to Programming Methods, Introduction to Software Design, Introduction to Discrete Mathematics, Introduction to Computing Systems, Learning Systems, Machine Learning & Data Mining, Decidability & Tractability, Algorithms

## Experience

### NASA - DEVELOP National Program

#### Research Intern

📅 September 2021 – November 2021

- We partnered with the Washington DC Department of Energy & Environment (DOEE) to create Solar Potential Maps for neighboring communities outside of DC using NASA POWER solar data and a LiDAR-derived digital surface model.
- Our models and code library will be used to inform policy decisions around solar panel installations in the area.

### Netlab - WiSoSuper: Benchmarking Super-Resolution Models for Wind and Solar Data

#### Research Fellow

📅 June 2021 – September 2021

- Modified deep learning-based super-resolution models, and applied them to satellite data to increase the resolution of wind speeds and solar irradiance fields for informing short-term, local energy planning.
- Published a wind and solar dataset for machine-learning.
- Presented at NeurIPS CCAI Tackling Climate Change with Machine Learning 2021 Workshop
- Project Page: <https://rupakv.com/research/wisosuper>

### Netlab - Battery Modelling

#### Research Intern

📅 February 2021 – June 2021

- Built upon Netlab's Adaptive Charging Network (framework for electric vehicle charging) to improve accuracy of power-consumption predictions and optimize charging for an individual user.
- Used optimization theory to parse through batter charging data and schedule energy loads in a vehicle fleet.

## Skills

### Technical Skills

Python    Java    C    JavaScript    React    GIS  
MySQL    Jupyter    MATLAB    Mathematica

### Soft Skills

Motivating & Leading    Clear Communication  
Organizing Projects

## Programs & Projects

### Navajo Nation Solar Power - Caltech's Engineer's Without Borders

#### Team Member

📅 June 2021 – Present

- Used optimization theory to model power output from sustainable resources such as solar panels in the Navajo nation.

### EarthDNA

#### Ambassador

📅 February 2021 – Present

- Trained for effective scientific communication for mitigating climate change.
- Actively participated in adaptive work for developing a basis for a community service organization which consults for sustainable projects around the globe.

### Hacktech

#### Competitor

📅 April 2021

- Within 48 hours, developed a user-friendly mobile application, Terra, for tracking and reducing an individual's carbon footprint.
- Created an algorithm for calculating carbon footprint, and designed tasks to encourage each user to convert to a more sustainable lifestyle.

### Stanford's Effective Altruism Fellowship

#### Fellow

📅 January 2021 – March 2021

- Researched and debated topics of effective altruism (health care, existential crises, longtermism, emerging technologies, etc).