

# Vignesh Saravanakumar

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## EDUCATION

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**South Brunswick High School Senior**, Monmouth Junction, NJ

*Expected Graduation*, June 2024

**School club Activities and Societies:** Robotics Club (Captain), Computer Science Club, Computer Science Academy, Chemistry Olympics, Mathletes, Chemistry Olympiad Exam, French Grand Concours-Certificate of Merit

**Honors:** 3rd Place in NJIT Chemistry Olympics Web Design, National Honors Society, High Honors Student, Concours-Certificate of Merit, Lockheed Martin Codequest 5th out of 86 teams, Seal of Biliteracy (Tamil), PSAT Commended, AP Scholar with Distinction

**Research Fellow UCI x GATI**, Remote

*Program Dates*, June - August 2023

**Description:** Conducted research in theoretical computer science at the Gifted and Talented Institute at University of California, Irvine.

## EXPERIENCE

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**Sevalaya**, Dayton, NJ (Remote), Sep 2021. - Present

- Volunteered over 80 hours leading classes for underprivileged children in Tamil Nadu, India
- Taught English leveraging fluency in my mother tongue: Tamil
- Worked towards creating access to education in rural areas

**Lightpost Energy**, Intern, Dayton, NJ (Remote), June 2023. - Sep 2023

- Developed 'Go-To-Market' analysis and fast tracked the implementation of the consumer-solar business segment offerings
- Supported with the business planning activities including SWOT analysis, market segmentation and competitor analysis
- Designed and developed new intuitive consumer website aligned with the company's mission, vision and values
- Assessed, programed and implemented new estimating software models for the solar installation
- Presented solar proposals to residential homeowners articulating the key value proposition of our offering
- Held private consultations and presented solar solutions totaling over \$110k to several clients

**C Curriculum developer and Volunteer Teacher, Code 4 Tomorrow**, *Volunteer Teacher & C/C++ Curriculum Developer*, Dayton, NJ (Remote), Sep 2022. - Present

- Volunteered over 80 hours leading lectures
- Instructed students ranging from elementary school to high school
- Independently created lesson plans and delivered lectures to the students
- Taught multiple topics including Python, Java, Algorithms and Data

**iStart Valley**, *Student Intern*, Dayton, NJ (Remote), Jun 2023 - Sep. 2023

- Selected as one of top 100 out of 3200 applicants (3.04% acceptance rate)
- Led and developed a full-fledged business model with a team of 6 interns, from ideation, target market identification to a compelling value proposition
- Researched and mapped the regional innovation ecosystem assets
- Learnt and identified the applications for the latest technologies such as AI, machine learning, and blockchain

## **Theoretical Computer Science Research Intern, Dayton, NJ (Remote), Sep 2022. - Present**

- Conducted research on “The computational complexity of Fischer Random chess” under the mentorship of Jesse Stern, a doctoral candidate at the University of Chicago in the field of theoretical computer science
- Studied limitations on our ability to write algorithms from a computational complexity perspective
- Research paper was accepted for the publication in the University of California, Irvine Journal
- In the process of publishing the research paper in arXiv.

## **LEADERSHIP**

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### **Vex Robotics Team, South Brunswick High School, *Captain & Lead Programmer*, Jun. 2022 - Present**

- Managed and led a 13 person team through 6 competitions and a year long season
- Won 4 awards and ranked top 5 in the state of New Jersey out of 150 teams in terms of awards won through the 2022-2023 season
- Designed a robot winning tournament champion at South brunswick competition out of 45 teams
- Programmed a robot using industrial-level level algorithms like PID Controllers and Odometry, using calculus and trigonometric functions that could move autonomously and manually
- Developed a discord bot to aid in the management of the team

## **SKILLS & Awards**

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**Skills:** Python, Java, C#, Git, Discord, Discord API/Bot Programming, Google Sheets, Microsoft Excel, Research, Analysis

### **Hackathon Wins:**

- Winner at PennApps XXIV
  - Built a complete financial management system at the world's oldest collegiate hackathon
  - Only winning high school team among the participants
  - Won in the web development category
- Uber Hackathon Global Finalist
  - Top 15 in the world of over 700 participants
- Major League Hackathon November Month-Long Hackathon Winner
- USA Computing Olympiad Silver
- Built natural evolution model and Won 2nd place at hackJPS
- CyberStart America Bronze Award 2022-23
- Built Desmos Art Generator and Won at STEAMFest Mini Hackathon
- Won 2nd at YouthCodeX Hackathon