Naveen Arunachalam

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EDUCATION

CALIFORNIA INSTITUTE OF TECHNOLOGY

BS in Chemical Engineering
Expected June 2018 | Pasadena, CA
Conc. in Biochemistry
College of Engineering
Jorgensen Scholar
Gross-Lockheed Scholar
Cum. GPA: 4.12 / 4.3
Major GPA: 4.15 / 4.3

WESTWOOD HIGH SCHOOL

Grad. May 2014 | Austin, Texas

LINKS

Github:// **naveenarun**
LinkedIn:// **naveen arun**
YouTube:// **naveen arun**
Facebook:// **naveen.arun.315**

COURSEWORK

Chemical Engineering Thermodynamics
Organic Chemistry
Differential Equations
Waves, Quantum Mechanics, and Statistical Physics
Introductory Methods of Applied Mathematics for the Physical Sciences
Introduction to Computer Science
General Chemistry
(Teaching Asst)
Separation Processes
(Teaching Asst)

SKILLS

PROGRAMMING

Over 5000 lines:
Python • Shell • Java • Matlab
LaTeX
Over 1000 lines:
C++ • Javascript • HTML & CSS
Familiar:
MySQL • Android • Mathematica • TCL

SCIENTIFIC WRITING

• Computational Prediction of Interactions Between β-Ionone and hOR5A1-6 (CURJ, 2015)
• Nanoparticle Induced Immunoresponsive Correction (NIIC) and Redirection of Fat Accumulation (RFA) (ExploraVision, 2013)

SOFTWARE PORTFOLIO

GENE-REG PY | Python Package

Aug 2014 - Dec 2014

- Predicts the time-evolution of gene regulatory networks.
- Successfully reproduced activation and suppression events, as well as exotic phenomena such as repressilator cycles (observed by Elowitz, et. al, 1999).

XYZVIEW | UNIX Chemistry Visualization Software

Dec 2015 - June 2016

- Reads and displays xyz files containing molecular structure data.
- Allows 3D movement via click-and-drag rotation and arrow key input.
- Renders both static and animated files.
- All code was written in C++.

RESEARCH EXPERIENCE

CALTECH THEORETICAL PHYSICS | Software Developer

June 2016 – Present | Pasadena, CA
Worked with Prof Tom Miller to create software tools for analyzing ion-polymer dynamics in batteries. Ongoing research is related to analyzing ion transport in novel polymers.

MATERIALS AND PROCESS SIMULATION CENTER | Head Undergraduate Researcher

June 2015 – January 2016 | Pasadena, CA
Lead the development of OR Structure Prediction Suite, a group of scripts that discovers optimal internal configurations of olfactory receptor proteins, increasing time efficiency of structure determination by 40%. Research related to the structure of hOR5A1 was published and peer-reviewed in Caltech Undergraduate Research Journal (CURJ).

AWARDS

2016	Fellowship	Marcella Bonsall Undergraduate Research Fellowship
2016	Top 3%/500k	Project Euler
2015	Fellowship	Caltech Summer Undergraduate Research Fellowship
2014	Scholarship	National Merit Finalist
2013	Top 147/National	ACS Chemistry Olympiad Semifinalist

SOCIETIES

2016	Chapter President	American Institute of Chemical Engineers, Caltech
2016	Global	Github Contributor (NumPy, Texture, Curiosity, Mojibar)
2015	National	American Radio Relay League (General Licence)

NEWS MENTIONS

"Caltech grad and burgeoning coder Naveen Arunachalam came up with the side-scroller game [Dat Boi]" - **Daily Dot (2016)**
"Westwood top students heading to the West Coast" - **Austin-American Statesman (2014)**
"Austin Student Scientists Get Major Recognition for Diabetes Research" - **KUT, India West (2013)**