

# AADESH

Skills: C/C++, Python, Julia, Unix/Linux, SQL, Shell Script, Verilog, Git.

Languages: English, Hindi, Marathi

## EXPERIENCE

### Julia Season of Contribution(JSoc) (language Julia)

May 2019 - Aug 2019

(Code of Conduct same as Google Summer of Code)

- Implemented Range over-approximation algorithm which improves bounds over Range of Taylor Models By 70-95% using TaylorMode to Zonotope conversion.
- Developed RangeEnclosures.jl a Julia Package which bounds polynomials using various methods, which was initiated by my PR to TaylorModels.jl.
- Implemented Branch and Bound(BNB) and Linearly dominated Bound(LDB) algorithm. BNB can minimise relative precision up to 50% and achieve relative precision  $[1e-5, 1e-5]$  in most of the cases. Debugged porting validated\_int to TMJets algorithm.
- Created Proof of Concept for Domain Contraction Methods using Interval Constraint Programming.

### National Institute of Technology, Tiruchirappalli - Intern (Python, NLTK) Nov 2018 - Jan 2019

- Taught myself Python, Pandas, NLTK and sci-kit learn. (natural language processing)
- Implemented naive Bayes classification algorithm, over text news from different sources.
- Analysed data by plotting graphs using Ipython, cleaned data to feed in ML algorithms.

### Personal project - Accelerating optimization via machine learning

Mar 2019 - Apr 2019

- Implemented surrogate optimization algorithm with the help of regression using RBF.
- Parameter of ODEs can be predicted, In case of lotka volterra equation we found out that parameter is predicted with an accuracy of 80%.
- Surrogate match the actual ODE which can be visualized by graphs.

### Leadership roles and scholastic achievement

- 7th in regional (Scholarship) HHS Exam among 20,000 student.
- Directed short film, managed a team of six fixed spots to shoot and workflow planning.
- Caption of High school Kabaddi team, bagged 2nd place in division level. (total teams 30)

## EDUCATION

### Indian Institute of Information and Technology, Tiruchirappalli

July 2017 - May 2021

Computer Science and Engineering

CGPA - 7.75 (Current GPA - 8.09)

#### Key courses -

Software Engineering, Internetworking Protocols(Socket Programming C and Java), Database Management Systems(SQL, XML), Computer Architecture - Current Courses.  
Data structures(C/C++ Lab), Introduction to Algorithms(C/C++ Lab), Probability Theory, Principles of Operational Research, Operating Systems(Unix/Linux Lab), Data Communications and Networking - completed courses.

**Sports** - Swimmer, 2nd place in Volleyball at Prothymas(IIIT Sports events).

**College clubs** - Member of Genesis(Robotics club), developed robotic arm(2D) in group of three.  
Member of Reel Club(Short film).

**Narayana Junior College (High school)**

Percentage - 94%

