# Ashwini Suriyaprakash

305 Memorial Dr, Cambridge, MA 02139 | ashwinis@mit.edu | 408.370.8907
https://ashwinis.com | https://github.com/AshwiniS7

## EDUCATION

**Massachusetts Institute of Technology (MIT), Cambridge, MA** 2021-2025
Bachelor of Science in Computer Science and Engineering, Minor: Mathematics GPA: 4.9/5.0

Coursework Completed: Design and Analysis of Algorithms, Introduction to Algorithms, Computation Structures, Fundamentals of Programming, Introduction to Computer Science Programming in Python, Introduction to Deep Learning, Math for Computer Science, Differential Equations, Linear Algebra & Optimization, Single Variable Calculus, Multivariable Calculus, Physics I: Mechanics, Physics II: Electricity and Magnetism, Principles of Chemical Science, Introductory Biology

Coursework in Spring 2023: Software Construction, Computer Systems Engineering, Introduction to Probability and Statistics

## INTERNSHIP EXPERIENCE

**Software Engineer Intern, Quantea** Supervisor: Michael Francisco Summer 2022
Significantly enhanced network monitoring performance by (a) improving performance of network packet sorting (33.9% faster) and (b) developing efficient file I/O algorithm and multi-threading to store captured packets using DPDK framework (~33.8% faster file write rate). Implemented programs in C language on existing codebase.

**Research Intern, Prof. Berger's Lab, MIT** Advisor: Maxwell Sherman Spring 2022
Developed software to determine the clinical significance of cancer cell line genetic mutations affecting cryptic splicing. Implemented programs using Python and Linux shell scripts.

**Research Intern, Snyder Lab, Stanford University** Advisor: Dr. Graham Erwin 2020-2021
Developed software pipeline in Python to analyze genomic repeat expansions in cancers. Co-author of paper titled, "A genome-wide atlas of recurrent repeat expansions in human cancer genomes," published in the Nature journal. Paper: https://www.nature.com/articles/s41586-022-05515-1

**Research Intern, Markstein Lab, UMass Amherst** Advisor: Dr. Michele Markstein Summer 2019
Demonstrated efficacy of two drug combinations on cancer treatment in fruit flies by conducting laboratory experiments with genetic crosses.

## INDEPENDENT PROJECTS

Clustered contemporary music by developing deep learning CNN-based autoencoder (Keras) 2022
Developed AI-powered Voicebot as Amazon Alexa Skill for at-home recuperating patient interview 2018-2019
Created predictive models using Python to identify high risk factors for substance abuse 2017-2018

## PROGRAMMING SKILLS

**Languages:** C/C++ (35K cumulative lines of code), Python (19K cumulative lines of code), Java, R, Perl, Julia, Linux shell scripting, JavaScript; **Algorithms:** Recursion, dynamic programming, range queries, graph search; **Data structures:** Array, linked list, stack, queue, map, trees; **Object-Oriented Programming:** C++, Java, Python; **AI:** Regression and classification using scikit-learn, Deep Learning using Keras/TensorFlow; **Debuggers:** GDB; **iOS development:** Swift; **Web development:** HTML, CSS, WordPress

## RELEVANT ACHIEVEMENTS

USA Computing Olympiad Gold Qualifier, 2018; Harker Programming Invitational, 1st Place, Advanced Division, 2020; Achievement Roll in American Mathematics Competition 10B, 2017

## LEADERSHIP

**Mentor, MIT CodeIt Club** (codeit.mit.edu) Fall 2021, Spring 2022
Taught fundamentals of programming through Scratch twice a week to Grade 6-7 girls in MA, NJ, NH schools.