Email: anubhav.4.sen@gmail.com
Home Address: Norristown, PA

ANUBHAV SEN

GitHub:
https://github.com/asen4

Personal Website:
https://asen4.github.io

EDUCATION

Bachelor of Science in Computer Engineering
The Pennsylvania State University, University Park, PA — Graduation: May 2026
College of Engineering | Schreyer Honors College — Cumulative GPA: **3.92/4.0**

WORK EXPERIENCE

Computer Science Grader & Learning Assistant (LA) — **January 2023 – Present**

- Assisting my former computer science instructor in grading students' homework assignments, labs, and exams.

SOFTWARE DEVELOPMENT PROJECTS

React Native Development — **May 2023 – Present**

- ***Nittany Retails***: e-commerce (JavaScript-based) application — **August 2023**
  - Trade unused goods and textbooks with students; deployed on Apple App Store & Google Play Store.
  - Hosted NodeJS backend server and connected it to MongoDB database to store user data effectively.
  - Incorporated Stripe API to handle payment processing methods in order to generate internal revenue.

Android Application Development — **August 2019 – Present**

- Published **3 Android (Java-based) applications** to Google Play Store that have a growing user base – currently exploring how to increase user engagement and improve feature development.
- ***Smart Planner***: digital student planner application — **July 2022**
  - Integrated AgendaCalendarView to get a CalendarView template and Picasso library to display images.
  - Tested across different physical devices and the Android Emulator to assure quality and performance and debugged issues using Logcat (command-line tool to see log of system messages during runtime).
- ***TalkZone***: video-calling/casting media application — **October 2021**
  - Incorporated and improved upon multiple features from *TagOut!* such as various file type messaging, phone number authentication, and Google Material Design UI guidelines.
  - Integrated the Jitsi Meet SDK (an instant messaging and video conferencing application) to initiate calling sessions and the Google Cast SDK to transmit playback from the device to the TV.
- ***TagOut!***: social media application — **July 2021**
  - Implemented Firebase Authentication for registering emails and passwords (including Google Sign-In).
  - Optimized scrolling performance in posts and messages list by using a RecyclerView to "reuse" layouts and update views accordingly based on data stored in the Firebase Database.

Video Game Development — **August 2018 – August 2019**

- Built clones of classical games like *Angry Birds*, *Flappy Bird*, *Snake*, and *Tetris* using Pygame (an open-source Python package created for developing video games).

TECHNICAL SKILLS

- Proficient: Java, Python, Android SDK, Android Studio, Google Firebase, XML
- Intermediate: SQL, Git, JavaScript, NodeJS, MongoDB, React Native

RESEARCH EXPERIENCE

Theory and A Heuristic for the Minimum Path Flow Decompositon Problem — **July 2023 – Present**

- Investigating decomposition of a directed cyclic graph such as to minimize the number of path sets between all sink and source nodes; applying theories from a working model available on DAGs from professor's research.
- Building an operation to transform graph and make 2 distant edges adjacent to help find all possible *s-t* paths.

AI for Politics — **November 2022 – Present**

- Predicting future US election results by scraping **10K/day** political tweets using Twitter API, separately classifying each one based on political leaning with NLP, and creating a heat map of US to visualize the results.
- Determining accuracy of the procedure by comparing experimental results with past election outcomes.

LEADERSHIP/ACTIVITES

AlgoPSU Director — **January 2023 – Present**

- Mentor **24 students** on abstract data structures and walk through LeetCode questions to reinforce concepts.

Java: A Comprehensive Guide (Parts I & II) — **October 2021 – August 2022**

- Authored and published a two-part written guide to the fundamentals and advanced theories of Java; only available on Amazon as Kindle eBook, hardcover, and paperback.