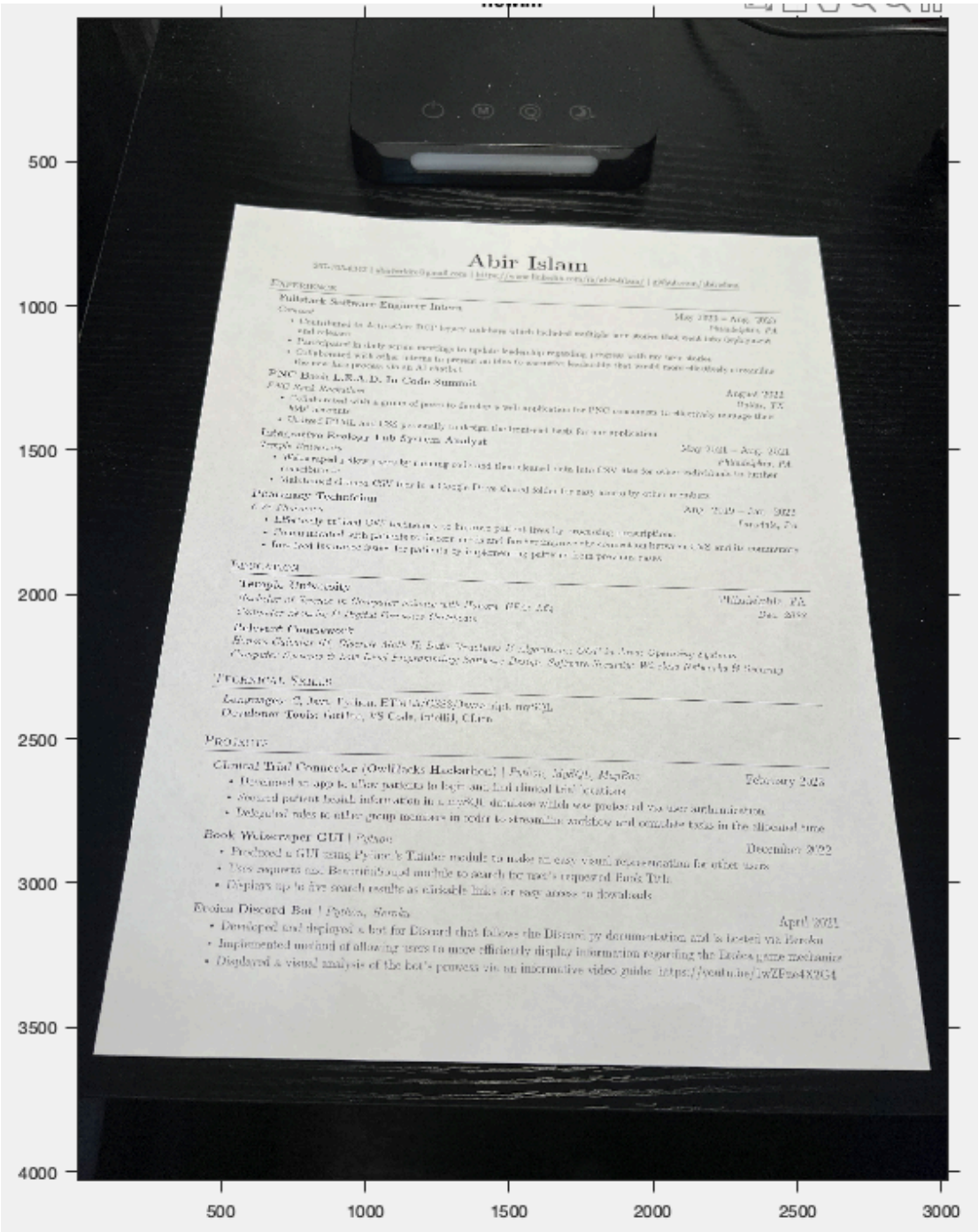
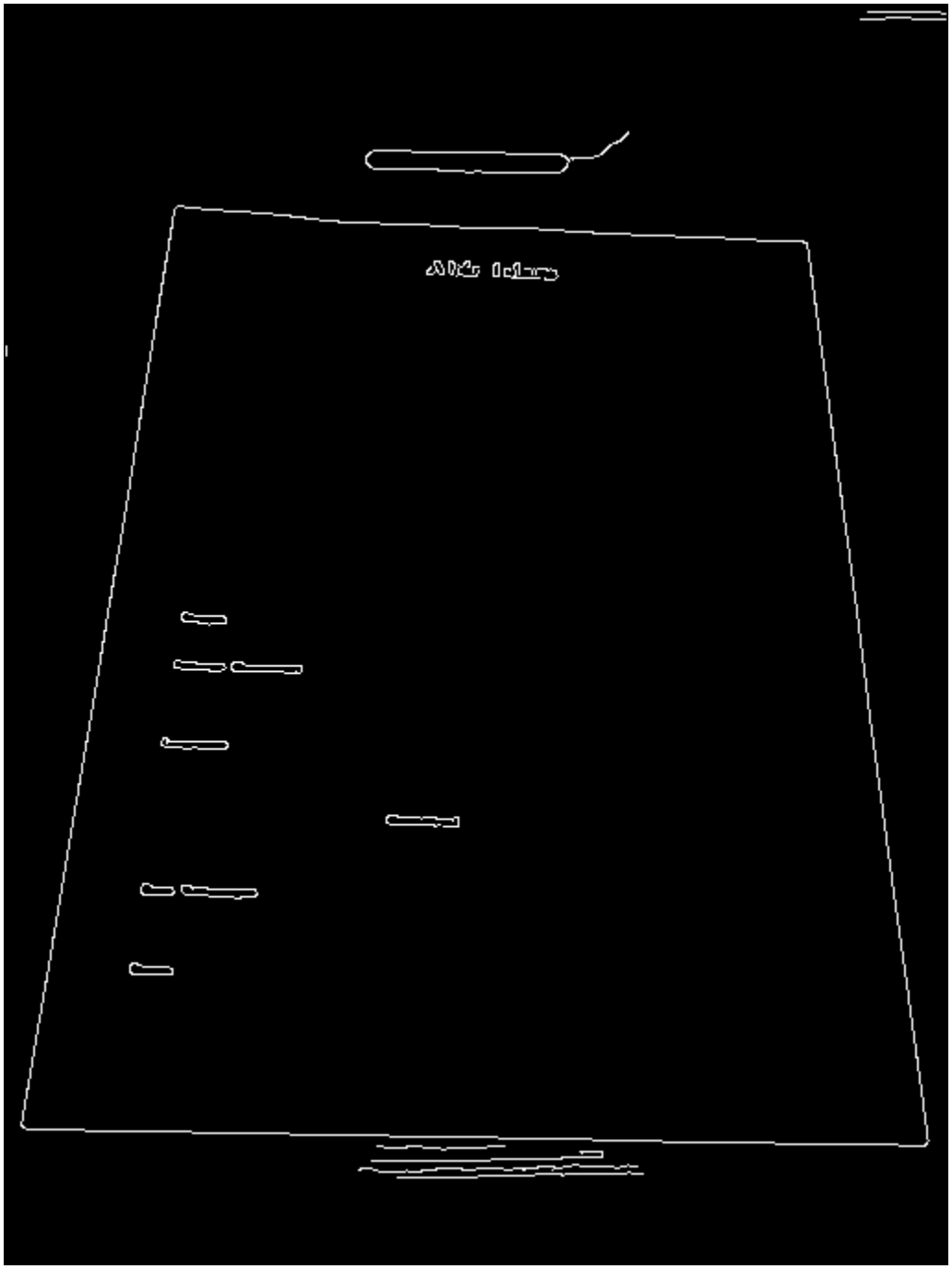
CS583 Project Report
10 December 2024
Abir Islam
Seena Soroush

Part 1: Image Prep and Detection

Original Image

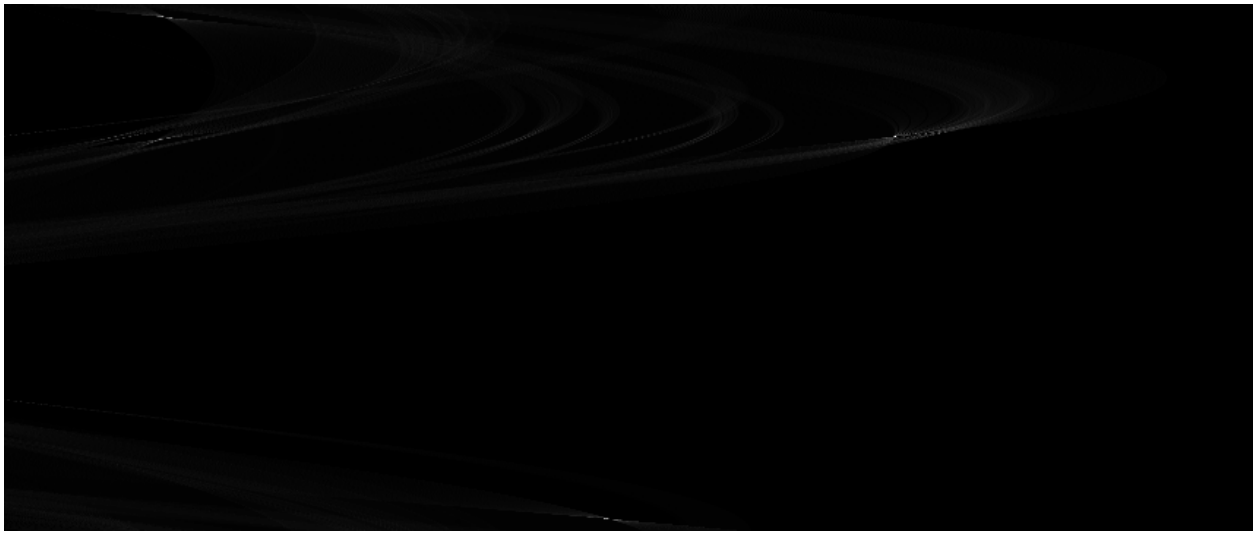


Edge Image



Part 2: Hough Transform for Line Detection

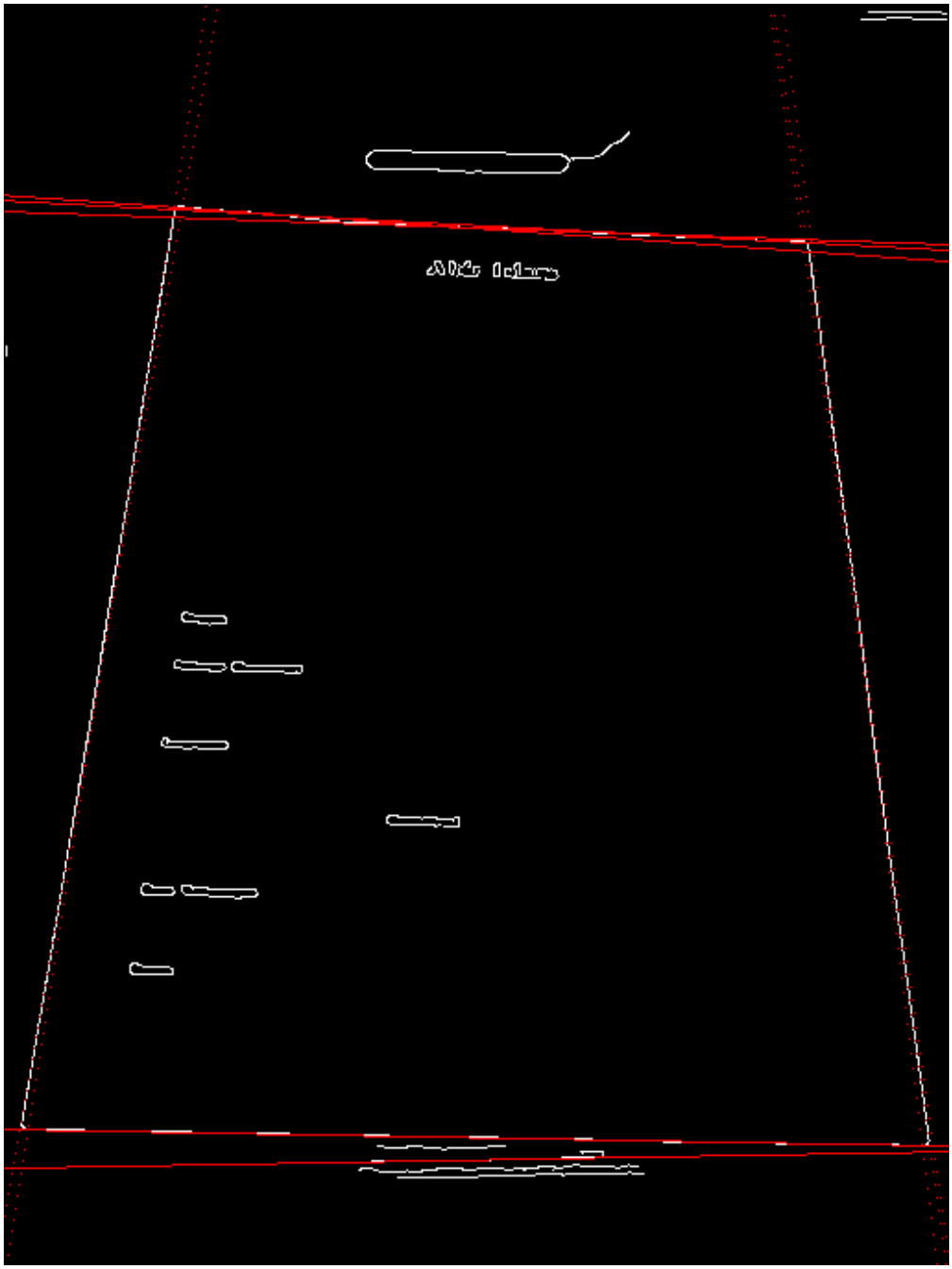
Hough Transform Candidate Lines



Part 3: Relevant Line Identification

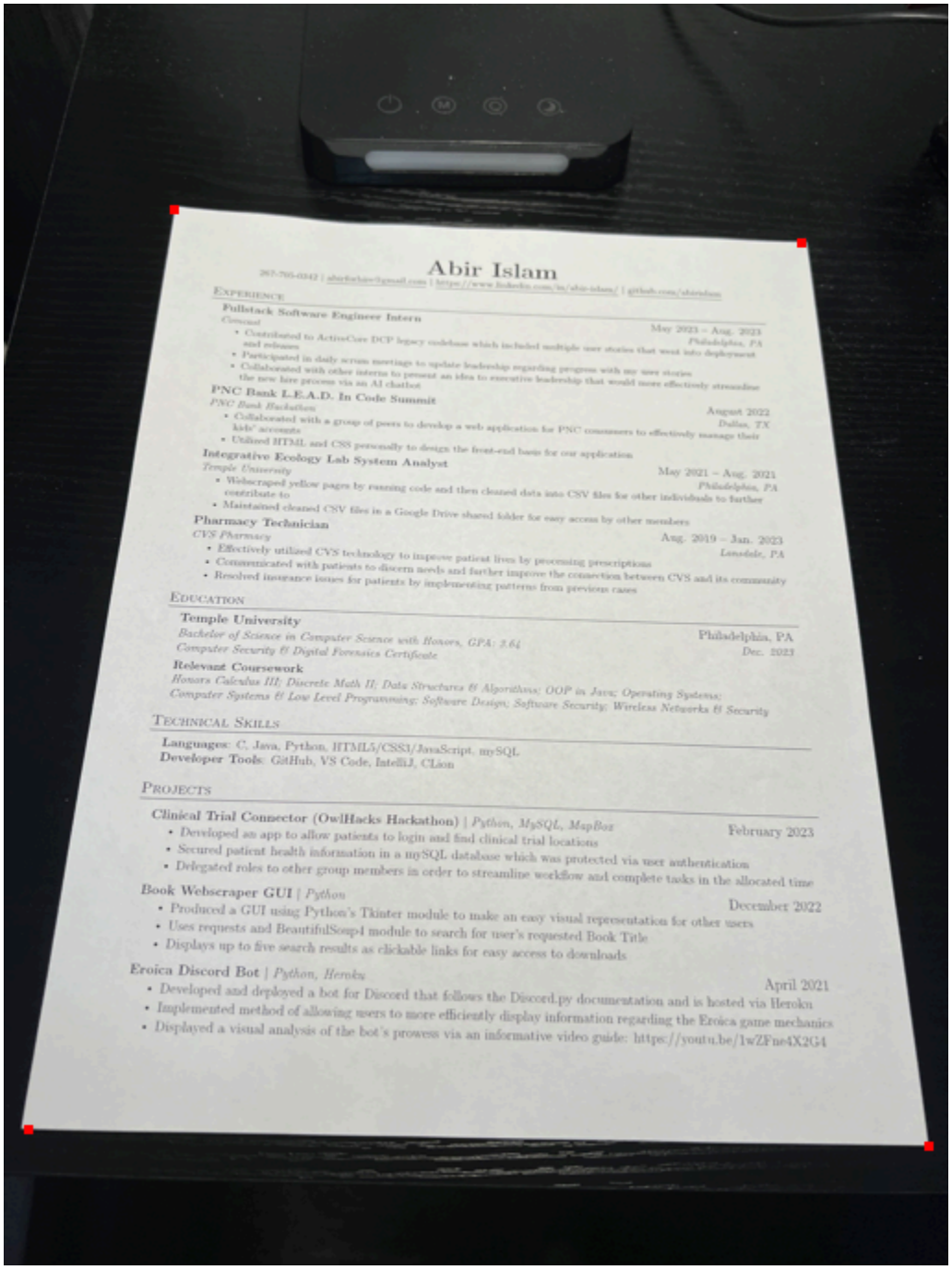
To select our potential lines, we first went through the accumulator matrix to grab the top 10 lines with the highest vote counts. We realized that it would grab multiple of the same lines, so we grouped lines that were together based on angle and distance. Then for each group, we only kept the line that had the highest vote to begin with. We then consolidated this down to 4 groups, which represent the 4 edges of the paper.

Superimposed lines on edge image



Part 4: Line Intersections

4 Corners Highlighted



Part 5: Rectification

Abir Islam

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Experience

Fullstack Software Engineer Intern — *May 2023 – Aug. 2023*
Comcast — *Philadelphia, PA*

- Contributed to ActiveCore DCP legacy codebase which included multiple user stories that went into deployment and releases
- Participated in daily scrum meetings to update leadership regarding progress with my user stories
- Collaborated with other interns to present an idea to executive leadership that would more effectively streamline the new hire process via an AI chatbot

PNC Bank L.E.A.D. In Code Summit — *August 2022*
PNC Bank Hackathon — *Dallas, TX*

- Collaborated with a group of peers to develop a web application for PNC consumers to effectively manage their kids' accounts
- Utilized HTML and CSS personally to design the front-end basis for our application

Integrative Ecology Lab System Analyst — *May 2021 – Aug. 2021*
Temple University — *Philadelphia, PA*

- Webscraped yellow pages by running code and then cleaned data into CSV files for other individuals to further contribute to
- Maintained cleaned CSV files in a Google Drive shared folder for easy access by other members

Pharmacy Technician — *Aug. 2019 – Jan. 2020*
CVS Pharmacy — *Lansdale, PA*

- Effectively utilized CVS technology to improve patient lives by processing prescriptions
- Communicated with patients to discern needs and further improve the connection between CVS and its community
- Resolved insurance issues for patients by implementing patterns from previous cases

Education

Temple University — *Philadelphia, PA*
Bachelor of Science in Computer Science with Honors, GPA: 3.64 — *Dec. 2023*
Computer Security & Digital Forensics Certificate

Relevant Coursework
Honors Calculus III; Discrete Math II; Data Structures & Algorithms; OOP in Java; Operating Systems; Computer Systems & Low Level Programming; Software Design; Software Security; Wireless Networks & Security

Technical Skills

Languages: C, Java, Python, HTML5/CSS3/JavaScript, mySQL
Developer Tools: GitHub, VS Code, IntelliJ, CLion

Projects

Clinical Trial Connector (OwlHacks Hackathon) | *Python, MySQL, MapBox* — *February 2023*

- Developed an app to allow patients to login and find clinical trial locations
- Secured patient health information in a mySQL database which was protected via user authentication
- Delegated roles to other group members in order to streamline workflow and complete tasks in the allocated time

Book Webscraper GUI | *Python* — *December 2022*

- Produced a GUI using Python's Tkinter module to make an easy visual representation for other users
- Uses requests and BeautifulSoup4 module to search for user's requested Book Title
- Displays up to five search results as clickable links for easy access to downloads

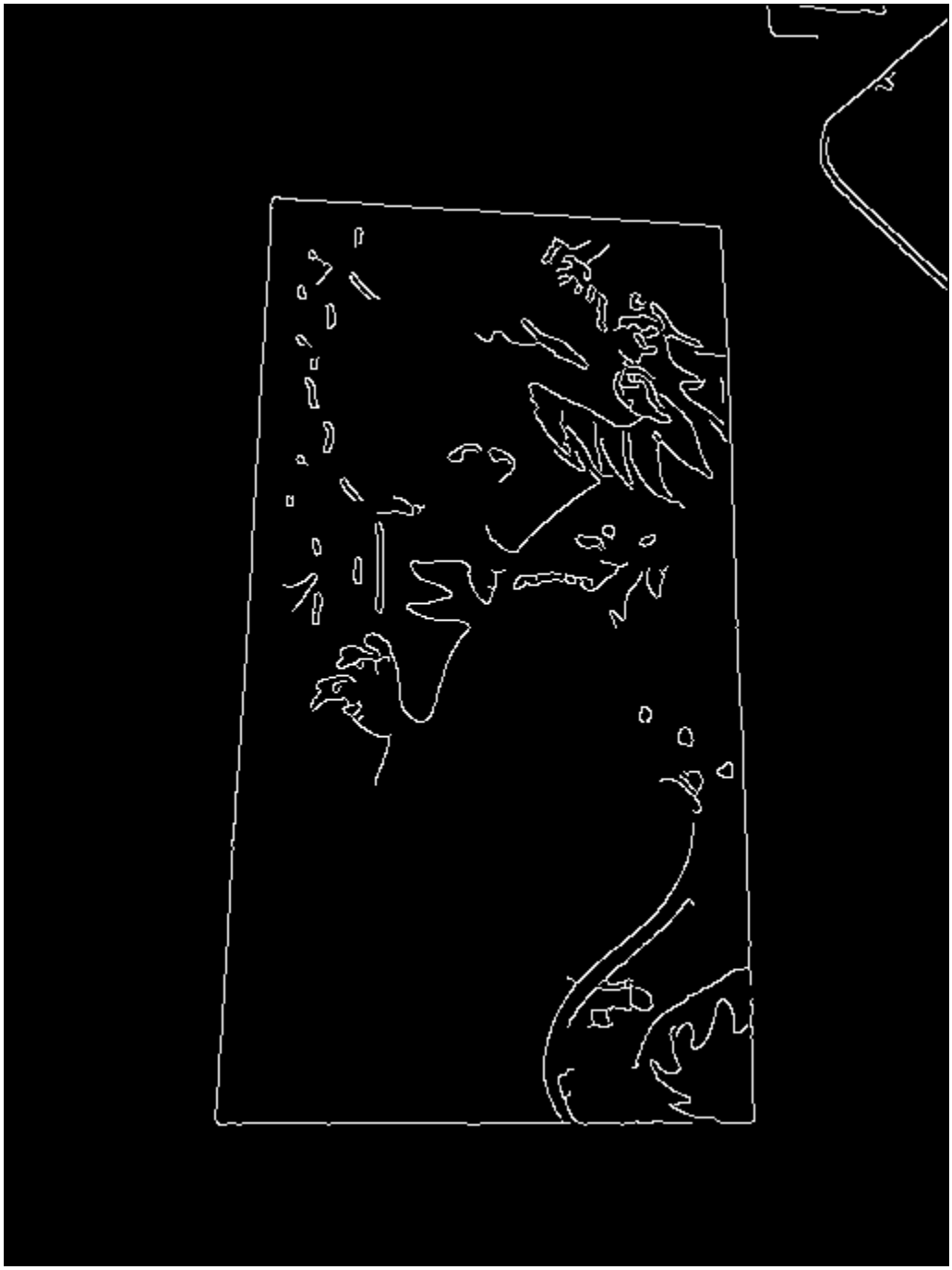
Eroica Discord Bot | *Python, Heroku* — *April 2021*

- Developed and deployed a bot for Discord that follows the Discord.py documentation and is hosted via Heroku
- Implemented method of allowing users to more efficiently display information regarding the Eroica game mechanics
- Displayed a visual analysis of the bot's prowess via an informative video guide: https://youtu.be/1wZFne4X2G4

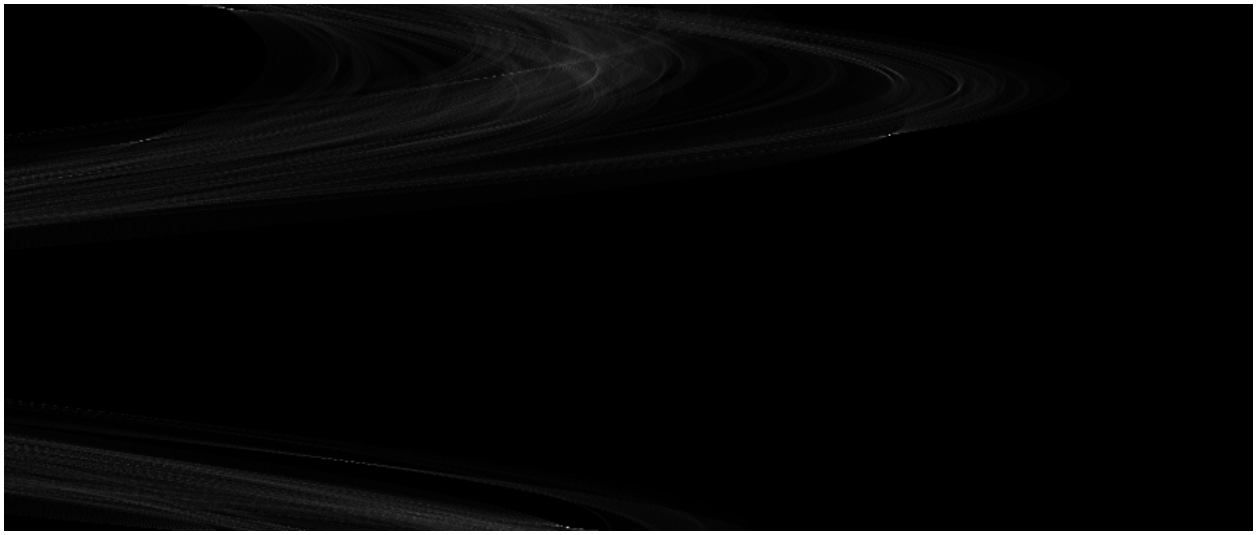
Part 6: Another Image!

Original Image

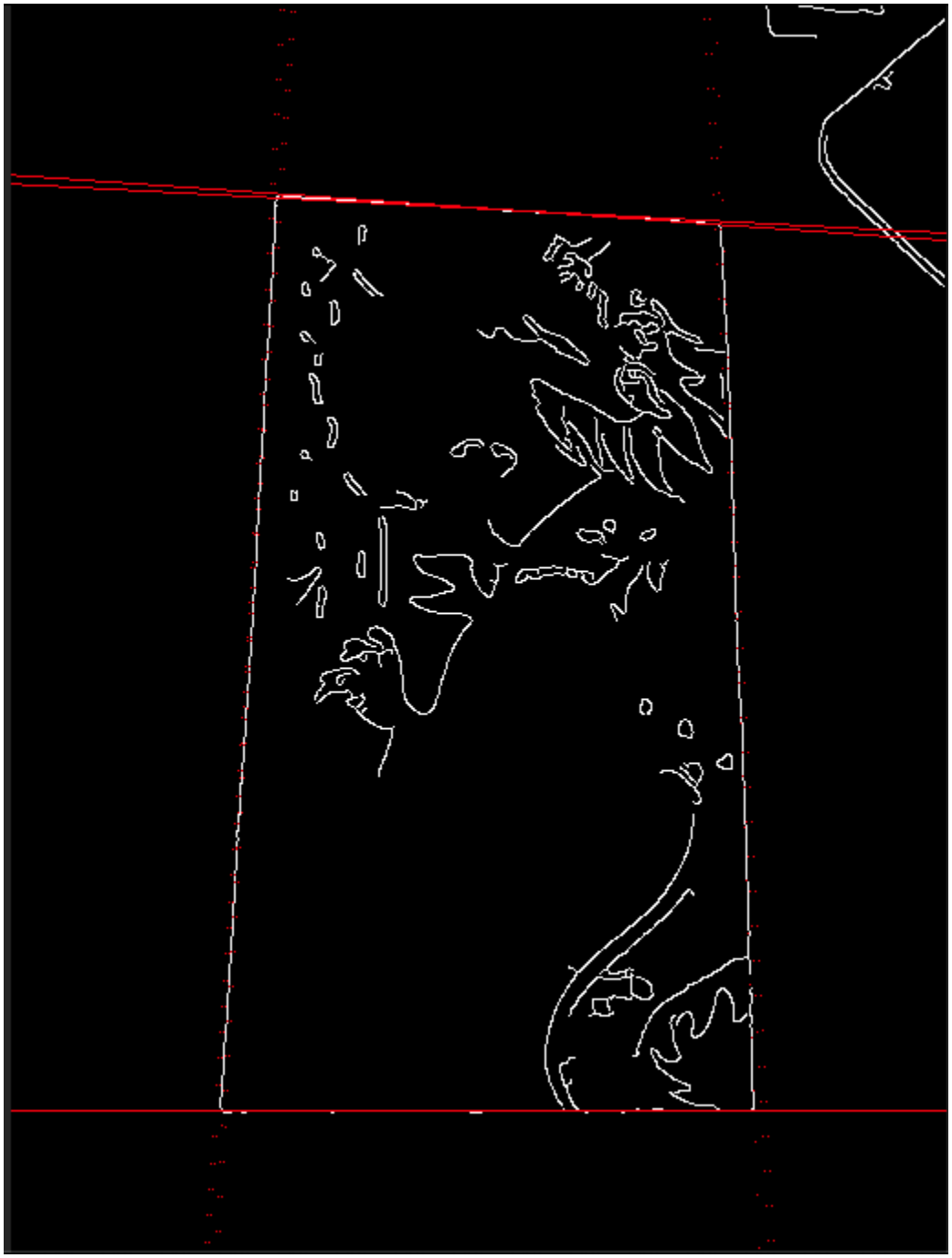
Edge Image



Hough Transform Image



Superimposed Lines on Edge Image



4 Corners Highlighted

Rectified Image