

# Abraham Alkhatib

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## EDUCATION

### University of Illinois at Urbana-Champaign

**Expected 05/2025**

GPA: 3.73/4.00

- Bachelor of Science, Bioengineering
- **Minor:** Electrical Engineering
- **Skills:** C/C++, Swift, SQL, MATLAB, Python, Java/Kotlin, CAD-Autodesk Fusion 360
- **Awards:** James Scholar Honors student, Outstanding Freshman Exhibit (2<sup>nd</sup>)

## EXPERIENCE

### Wake Forest University School of Medicine

#### Software Engineering Intern, Clinical Informatics

**05/2023 – Present**

- Embedded a cardiovascular disease prediction AI model on a mobile application using TensorFlow-Lite, improved AI inference time by over 93% from previous generations.
- Improved the interoperability of the research application to power a suite of AI-based prediction models.
- Created a cox-regression model to incorporate meta-factors such as BMI and age while accounting for time-to-event data to create a more comprehensive risk score.
- Optimized the risk prediction pipeline for edge devices, decreased ECG processing time to under 25ms.
- Redesigned the user interface to improve intuitiveness and minimize clutter.

### Biomedical Engineering Society (BMES)

#### Technical Director

**05/2023 – Present**

- Managed all technical projects undertaken by BMES.
- Prioritized exposure and skill development among 100+ members, particularly underclassmen.
- Formulated a new multi-year design project involving undergraduates from several departments.

#### Engineering Team Lead

**08/2022 – 04/2023**

- Designed a rotational isolation system for bicycle helmets using CAD that offers enhanced protection during angled impacts.
- Orchestrated weekly team meetings to centralize communication and ensure progress.
- Formalized the construction of a testing rig that provides rotational freedom in two axes.
- Coordinated communication between college administration and sub-design teams to ensure budget compliance.
- Awarded 2<sup>nd</sup> for *Outstanding Freshman Exhibit* during Engineering Open House among 200+ competitors.

### Pueblo Supermarkets

**01/2020 – 08/2021**

#### Operations Intern

- Streamlined the integration of newly acquired machinery by intermediating between contractors and store management.
- Shadowed store managers, maintenance crews and other employees.

## PERSONAL PROJECTS

### Eco-Friendly Flight Planner:

- Worked with a project team to design a flight planning algorithm that uses data from over 14,000 airports and 67,000 routes to determine the shortest route between any two airports.

### Heart Rate Variability Screener:

- Created a filtering method that detects heart-rate variability using novel filtering techniques with Fast Fourier Transform and wavelet denoising.

### Mosaic Board:

- Implemented an algorithm that uses k-D Trees to combine images from an album of photographs to create a PNG mosaic that resembles any image.

### Abe's Page:

- Created an interactive personal-portfolio using react, tailwind-CSS, and the Spotify API to showcase my current favorite songs and albums.