

# Ashwin Sundar

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Senior Software Engineer

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*Senior Software Engineer at DEPT Agency. B.S. in neuroscience from University of California, Los Angeles; M.S. in biomedical engineering from Arizona State University. 2016 recipient of a Graduate Research Fellowship awarded by Dr. Leland Hartwell (2001 Nobel Laureate). Co-founder of software company (SND Logic, LLC), developing software tools for biology researchers. Design for Six Sigma certified at Medtronic (green belt), recipient of 2018 Medtronic Beacon Award for outstanding engineering contributions, and recipient of internal trade patent at Medtronic.*

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## Job History

1. Senior Software Engineer - DEPT (Jan 2023 - present)
  2. Software Engineer III - DEPT (Jan 2022 - Jan 2023)
  3. Software Engineer II - Medtronic (Oct 2017 - Jan 2022)
  4. Graduate Engineering Intern - Medtronic (Aug 2016 - Oct 2017)
  5. Graduate Research Fellow - Arizona State University (Feb 2016 - Dec 2016)
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## Work Experience

### DEPT (January 2022 - present) - Denver, CO

*Technology consultancy based in Amsterdam, NL*

#### **Client: Google (August 2025 - present)**

- C++ development in YouTube codebase
- **Tools used:** C++, Mercurial

#### **Client: Arizona State University (April 2025 - July 2025)**

- Migration of Mulesoft services to AWS
- **Tools used:** Node.js, Terraform, AWS (lambdas, step functions, cloudwatch)

## **Client: TCGPlayer/eBay (Feb 2025 - April 2025)**

- Architecture Sprint + Prototype for backend services which link client applications to database servers containing Magic the Gathering card data
- **Tools used:** Go, Postgres, ngrok

## **Client: U.S. Department of Energy (DOE) (Jan 2024 - Feb 2025)**

- Web application for Grid Deployment Office
- Subcontracted via National Renewable Energy Lab in Golden, CO
- **Tools used:** Typescript, React/Next.js, AWS, Postgres, Docker, git, GitHub Actions

## **Client: Freewave Technologies (Aug 2023 - Dec 2023)**

- Satellite communications integration
- **Tools used:** Go, AWS, Postgres, Docker, git, GitLab

## **Client: Terumo BCT (Aug 2022 - July 2023)**

- Medical centrifuge (FDA Class I device)
- Embedded Linux (C++)
- Mentorship of junior engineers
- **Tools used:** C++, gdb, catch2, shell scripting, Linux Fedora, git

## **Client: Restaurant chain (Jan 2022 - Aug 2022)**

- Full-stack web development for high-visibility business homepage
- **Tools used:** Gatsby/ReactJS, GraphQL, Azure DevOps, git

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## **SND Logic, LLC (Nov 2023 - present)**

*Developing advanced software applications for biomedical researchers.*

- **Co-founder, lead developer**
- Creator of [MouseHouse](#)
  - In closed beta at Harvard Brain Science Initiative
  - 77 users across 38 research laboratories
- Accepted to 12-week startup pre-accelerator Founder University (<https://www.founder.university/>), run by Launch.co's Jason Calacanis
- Applied for NIH SBIR Phase I grant worth \$314k (rejected once, currently re-applying)
- Applied for Digital Science Catalyst Grant (rejected)
- Applied for Amazon Small Business grant (rejected)

- **Tools used:** Django/Python, DigitalOcean (app platform, droplets, databases, spaces)
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## Medtronic (Aug 2016 - Jan 2022)

Major medical device manufacturer

- **Software Engineer II** (Oct 2017 - Jan 2022) - Denver, CO
    - Full-stack web solution for requirements and risk management
    - Created and delivered requirements and risk management training to users in Colorado, Massachusetts, Florida, and Shanghai, China
    - Awarded 2018 Medtronic Beacon Award
    - Completed DRM Green Belt project - estimated business savings of \$1.6 million per year
    - **Tools used:** Cognition Cockpit, Javascript/jQuery, HTML/CSS, ObjectStore, Tableau, SQL, R
  - **Graduate Engineering Intern** (Aug 2016 - Oct 2017) - Phoenix, AZ
    - Implemented industrial statistics software tools, primarily around Design for Six Sigma
    - Awarded internal trade patent for healthcare analytics application
    - **Tools used:** SQL, Tableau, R, Subversion, Cognition Cockpit, Javascript/jQuery, HTML/CSS
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## ASU Biodesign Institute (Feb 2016 - Dec 2016)

Arizona State University

- **Graduate Research Fellow** (Feb 2016 - Dec 2016) - Tempe, AZ
    - La Belle Lab @ ASU. Stipend awarded by Nobel Laureate Dr. Leland Hartwell
    - Developed physiological sensing devices for human studies
    - Circuit board design, electrical testing, physical interface design, algorithm design
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## Education

**B.S. Neuroscience - University of California, Los Angeles (2013)**

**M.S. Biomedical Engineering - Arizona State University (2016)**

[IDENTIFICATION OF CARDIAC ARRHYTHMIAS IN ELECTROCARDIOGRAPHY DATA USING EMPIRICAL MODE DECOMPOSITION](#)

- **Advisors:** Dr. Jeff LaBelle, Dr. Mark Spano, Dr. Heather Ross
- **Abstract:** Electrocardiography (ECG) data is often subject to frequency domain techniques, such as Fourier and wavelet analysis, in order to deconstruct and understand the relationship between cardiac disease and electrical activity in the heart. However, ECG artifacts are typically brief,

making frequency domain analysis challenging. An alternate method of analysis, empirical mode decomposition (EMD), may be more appropriate for analyzing short windows of data, since data analysis never leaves the time domain. EMD was applied to more than 2,000 ECG waveforms spanning a range of subjects and arrhythmia types from the MIT-BIH Arrhythmia Database. Physician annotations were used to window and sort waveforms, and EMD was used to deconstruct waveforms into intrinsic mode functions (IMF). An average IMF for each arrhythmia and the healthy ECG waveform was calculated. IMFs from each arrhythmia were then compared with IMFs from healthy ECG data. This comparison can be thought to represent a unique signature of each arrhythmia type.

Electrocardiography

## Independent Study

- [Programming Languages, Part A](#) (Coursera/U Wash)
- [Accelerated Computer Science Fundamentals Specialization](#) (Coursera/UIUC)
- [Ultimate Rust 2 - Intermediate Concepts](#) (Udemy)
- Rust Fundamentals (Pluralsight)
- [HTML, CSS, and Javascript for Web Developers](#) (Coursera)
- [Introduction to UI Design](#) (Coursera)
- Circuits and Electronics I: Basic Circuit Analysis (MIT OpenCourseware)
- Discrete Mathematical Structures (Mesa Community College, Grade: A)
- Calculus III (Mesa Community College, Grade: A)
- Linear Algebra (Mesa Community College, Grade: A)
- Differential Equations (Mesa Community College, Grade: A)

## Awards and Certifications

- 2018 Medtronic Beacon Award
- DRM/DFSS Green Belt (Medtronic, 2018)
- 2017 Medtronic Internal Patent #A000\*\*\*\*
- 1st place, Mesa Community College Math Contest (2014)