TYLER HATTORI

Signal Processing Engineer
Music Enthusiast

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SUMMARY

Highly motivated and widely talented electrical engineering graduate student studying digital signal processing with a minor in control and graduate coursework in RF circuit design. Seeking an engineering role involving digital signal processing, machine learning, and image processing. Inspired by my love of music and desire to learn more about audio signal processing.

SKILLS

DSP, Image Processing, Transformer AI, Estimation, Wideband Imaging, Fourier Analysis, RF Circuit Design, Control, Robotics, Guitar.

Languages: Java, Python, ROS, JavaScript, HTML, C++.

Software: MATLAB, Excel, Greenfoot, EAGLE, ADS.

EDUCATION

| 9/2023 – 6/2024 | **M.S. in Signal Processing, Minor in Control** | UC Santa Barbara |
| | 3.67 GPA, including extra graduate coursework in RF Circuit Design. Mens Club Ultimate, Capstone EE TA. | |

| 9/2019 – 6/2023 | **B.S. in Electrical Engineering** | UC Santa Barbara |
| | 3.69 GPA, Dean's Honors, Mens Club Ultimate, CodersSB, IEEE | |

| 8/2015 – 6/2019 | **High School Diploma** | Granada HS, CA |
| | 4.44 GPA, 35 ACT, 1440 SAT, D2 Cross Country Captain, Livermore-Granada Boosters Olympian Scholarship. | |

PROJECTS

| ROS, IP | **From RC Car to Autonomous Robot (Capstone Project)** | github.com/Tyler-Hattori/capstone |
| | UCSB senior project. Led a team of 5 to build, code, and test a self-driving robot car with 8 navigational modes. | |

| AI | **Training a Transformer to Classify the Key of Guitar Tablature** | github.com/Tyler-Hattori/fretboard_ai |
| | Tokenized guitar chord progressions and classified their key using an encoder-only model (98% accurate). | |

| DSP | **Analyzing the Effects of Quantization on MP3 Decoding** | github.com/Tyler-Hattori/mp3_quantization |
| | Compared audio artifacts of various sources with variable MDCT length, masking threshold, and bitrate. | |

| Imaging | **Geolocation Estimation and Analysis** | github.com/Tyler-Hattori/geolocation |
| | Compared 4 methods of target estimation that consider the transmitter position and the 2 sets of receiver data. | |

| Imaging | **FMCW Depth Imaging** | github.com/Tyler-Hattori/FMCW_depth_imaging |
| | Holographically reconstructed a rebar profile from FMCW data transmit into the ground outside of Broida Hall. | |

| RF Design | **RF Transmitter Design** | github.com/Tyler-Hattori/rf_transmitter |
| | High efficiency 5G transmitter with an upconversion mixer, power splitter, phase shifter, and a class-A PA. | |

| JavaScript | **Bounce! a Side-scrolling Game Built with React** | github.com/Tyler-Hattori/bounce |
| | Learned website design over COVID; led a team of 3 and won second place in the CodersSB winter competition. | |

EXPERIENCE

| 9/2023 – 6/2024 | **Capstone Project Electrical Engineering TA** | UC Santa Barbara |

· Invited to be TA through professor recommendation after my success in capstone; advised 4 teams of EE seniors.
· Compiled an original ROS manual to be used by half the teams in the upcoming 2024-25 capstone program.

| 6/2022 – 9/2022 | **Applications Engineering Intern** | Monolithic Power Systems |

· Simulated and tested power converter topologies; shadowed AEs and FAEs.
· Evaluated and designed PCBs according to daily tasks.

| 6/2021 – 9/2021 | **Field Sales Engineer Intern** | Monolithic Power Systems |

· Worked closely with a small team named MPSNow to sell power devices to the mass market during the pandemic.
· Designed an Excel program to efficiently analyze sales data and generate biweekly reports for company execs.

| 5/2020 – 8/2020 | **Front Desk Attendant** | Las Positas Golf Course |

· Managed the pace of the course while answering phones and overseeing customer service.

CONFERENCES

| 10/2023 | **International Telemetry Conference 2023** | Las Vegas, NV |
| | Delivered a 20 minute presentation detailing the achievements of my Capstone project. | |