Alden E. Kane

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Education

University of Notre Dame, Notre Dame, IN	August 2016 – May 2020
Bachelor of Science	**Major:** Electrical Engineering	GPA: 3.64/4.00
University of Western Australia, Perth, WA, Australia	February 2019 – June 2019
Study Abroad	**Major:** Electrical Engineering	GPA: 3.80/4.00
University of Detroit Jesuit High School, Detroit, MI	August 2012 – May 2016
High School Diploma	**Major:** Liberal Arts	Class Valedictorian	GPA: 4.16/4.00

Relevant Work

Keysight, San Diego, CA — August 2020 – Present
Wireless Solutions Engineer
- Guide and technically support global 5G/LTE modem developers, operators, and government labs with Keysight industry leading 5G test, measurement, and development solutions
- Lead customer engagements, bring-up, and support for Narrowband Non-terrestrial Networks (NB-NTN)
- Responsible for $10-20 MM annually in Keysight 5G business with strong growth in target accounts that I support
- Collaborate extensively with R&D on development of a novel field-to-lab solution for emulation of field protocol and RF propagation
- Design and write 5G/LTE protocol scripts for test and development of new 5G features
- Develop automation tools for Keysight 5G Solutions using Python, C#, and other Keysight scripting applications
- Teach seminars on 5G technology to 50+ crowds; deliver demos and customer trainings on Keysight 5G Solutions

OptoSwim, South Bend, IN — January 2020 – June 2021
Co-Founder and Engineer
- Engineered proof-of-concept prototypes for computer-vision based swimmer/drowning detection systems
- Trained deep-learning computer vision algorithms for purpose of swimmer detection
- Owned all customer contact, installation, prototyping, embedded systems and computer vision algorithms for initial customer study of five OptoSwim modules in South Bend, IN residential pools

Veoneer, Southfield, MI — July 2019 – August 2019
Engineering Intern, Night Vision and Radar Systems
- Assisted with and documented setup of Night Vision 4 (NV4) system in pre-production vehicles
- Led software reflashing effort and performed electronic product validations (EPVs) for 77/24 GHz radar blind-spot detectors

Fiat Chrysler Automobiles US LLC, Auburn Hills, MI — May 2018 – August 2018
Product Development Intern, Uconnect Engineering
- Led development of proof-of-concept prototype for a novel wireless charging implementation in automobiles
- Improved USB-A and USB-C end-of-line testing procedures at FCA and Tier 1 supplier plants around the country

American Axle & Manufacturing, Rochester Hills, MI — May 2017 – August 2017
Product Engineering Intern, Mechatronics/Electronic Control Systems
- Worked on hardware development, data analysis, hardware validation, and software validation for actuation systems
- Assessed hardware durability and functionality through actuator teardowns after various stages of testing
- Automated process of uploading photographs of actuator teardowns using VBA

Engineering Experience

Computer Vision Research, Notre Dame, IN — March 2019 – May 2020
Researcher under Dr. Patrick Flynn of Notre Dame CVRL
- Investigated adversarial attacks on leading facial recognition models using sub-visual perturbations and noise

Computer Vision Term Project, Notre Dame, IN — August 2019 – Dec. 2019
Built Underwater Swimmer/Drowning Detection System, advised by Dr. Adam Czajka of Notre Dame CVRL
- Developed an underwater swimmer/drowning detection system using deterministic computer vision methods that achieved an average Intersection over Union (IoU) of 0.81 ± 0.12, then subsequently integrated machine learning-based classifiers

Mechanical Engineering Research, Detroit, MI — January 2015 – August 2015
Project Lead for "Development of the Wheelchair-Stroller," advised by Dr. Darrell Kleinke
- Invented a proof-of-concept prototype of a wheelchair-adaptable stroller and delivered it to a paraplegic mother from the Metropolitan Detroit area two weeks ahead of the September 1, 2015 deadline
- Spoke at TEDxDetroit 2015 and 2016 Society of Automotive Engineers World Congress regarding the Wheelchair-Stroller

Leadership & Activities

Shoreline Community Services, *Volunteer*, San Diego, CA   August 2022 – Present
- ➢ Monthly volunteer for homeless outreach, document support, job support, and programming in San Diego

Beacons North County, *Volunteer*, Carlsbad, CA   March 2021 – Present
- ➢ Guest speaker on web development to cohort of trainees in adult special education working on career-readiness skills
- ➢ Optimized WiFi distribution to meet growing physical office and classroom size

Stanford Hall Government, *Merchandise and Election Commissioner*, Notre Dame, IN   January 2017 – January 2019
- ➢ Design apparel and merchandise items for annual semester spirit wear order, hall fundraisers, and hall events

Skills

Software: Python, Bash, Linux, Git, OpenCV, MATLAB, JavaScript, HTML, CSS, C#, Machine Learning, Convolutional Neural Networks, Keysight Protocol R&D Toolset, Keysight Test Application, Keysight Signal Studio, MVG Wave Studio, ShannonDM Chipset Logger

Hardware: Network Emulator, Channel Emulator, Signal Analyzer / Generator, Network Analyzer, Compact Antenna Test Range, 5G New Radio, Non-terrestrial Networks, LTE, 802.11, RF Circuits, Thermal Imaging, CAN, Qi Standard, Circuit Design, 3D Printing, Prototyping

Interests

Surfing, Snowboarding, Golf, Squash, Open Water Swimming, Carpentry, Gardening, Web Development, Graphic Design, Reading, *Jeopardy!*, Randomness, Cooking