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>.-.#'9?')@%'&-9'):Tactile Sensing for OceanOneK Underwater Robot

06/2024 - 10/2024

**Advisor:** Mark Cutkosky, Stanford Biomimetics & Dexterous Manipulation Lab

- Designed a B+C-' :D'#EE:F '#'+\$E).-\$.&' for the OceanOneK robot's hands to enhance tactile sensing.
- Collected and processed experimental data using force–torque sensors and optical interrogators.
- Implemented #)%G##/)9&\$-\$-9-( )\$-G'#B\$-" I '&J#K4B##/-'.0)L1)\$-G'&\$.)-#9?0)>-M\*)#9'+,#'+&\$N to predict force and contact status, with)@/O/'9? and data preprocessing (normalization, filtering). Achieved ;!P) Q)623R0)>)Q)62=T with 80/20 train–test split and nearly identical training/validation loss (0.0521 / 0.0522).
- Assisted in developing a I ?+J-':+\$U+'-( )"9#+B)-.-\$.&' for underwater perception, showcased at the !"#%&' ()>&C&"9.)V-\$"-')M#G\$9?.

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@%'&-9'):Student Revision Behavior Analysis)KD'&\$W-)XI#' (0)O&U)4Y)+\$)9B#. .N) ))))))))))05/2024

- Designed and implemented statistical models (C&%"."'#U)?/U&?"-.+.)."-"+\$E0)9&' '-B#"&\$)#\$#B/.+.0) @&+..&\$5F-&Z-"' +9)(+".' '+CG"&\$.) to analyze revision patterns from 40 students' projects.
- Built and evaluated [ #+, -)D#/-.)9B#. .+%-'. to predict project preferences, achieving up to 100% test accuracy on certain datasets, utilizing Python (NumPy, pandas, scikit-learn) for (#'"U'-U'&9-..+\$E0) U'&C#C+B. "+9)Z&( -B+\$E0)#\$( ),+.G#B+W#"&\$2
- Published a research-style paper and reproducible [code on GitHub](#), demonstrating strong data analysis and machine learning skills.

**V&ZUG"-')!9+-\$9-)O-#9?-' ) ) ) ) ) ) ) ) ))))))08/2023 - 05/2025**

The Quarry Lane School, Dublin, CA

- Designed customized AP Computer Science Principles (AP CSP) and Middle School Computer Science curricula using Python, Java, HTML, and CSS, resulting in a significant increase in the AP CSP class average score from <145R("&)1435R (2024 California average: 3.08, global average: 2.90).

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Stanford Madera Groove Children Center, TCTM Kids IT Education Inc, Various Elementary Schools

- Taught '&C&"(9U)'&'#ZZ+\$E with Scratch, Lego Mindstorms, Lego WeDo 2.0, and Python
- Utilized classroom materials to implement STEM activities and maintained communication with parents

Li, H.\*, Xing, C.\*, Khan, S., \ ?&\$E0) ; 2, & Cutkosky, M. R. (2025). Whisker-Inspired Tactile Sensing: A Sim2Real Approach for Precise Underwater Contact Tracking. *IEEE Robotics and Automation Letters(RA-L)*

- @'&E'#Z+\$E))Python, C++, C, Java, JavaScript, Processing, R, HTML/CSS
- B'#Z- I &'J.) ^)O&&#.))NumPy, pandas, PyTorch, Onshape CAD, CorelDRAW, Casting, Adobe Photoshop
- M#\$EG#E-.] Mandarin (Native), English (Proficient), Cantonese (Intermediate)