Terry Yu

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Education

University of California, Los Angeles
Bachelor of Science in Mechanical Engineering - GPA: 3.76

Skills

Design and Analysis: SolidWorks, Ansys Mechanical, Ansys Fluent, Altair Inspire, Fusion 360, HSMWorks, GD&T
Manufacturing: Manual Mill, Manual Lathe, CNC, FDM and SLA 3D Printing, Waterjet, Plasma Cutter, Soldering
Electrical and Software: Java, MATLAB, Python, Arduino, C++, Visual Studio, Git, HTML, CSS

Experience

Stanford University June 2024 – Present
Mechatronics Research Intern *Palo Alto, CA*

- Designed and manufactured hardware components on computer vision-based Xenopus embryo sorter for the Beel Research Group, projected to sort 50 eggs per second with 99% accuracy
- Developed a PDMS-based microfluidics chip with a serpentine flow channel and quake valve sorter mechanism, ensuring quick and accurate imaging and sorting of millimeter-wide Xenopus embryo
- SLA printed mold and cast chip, FDM printed iterations of housing for chip and all electrical components

Bruin Formula Racing September 2023 – Present
Sprocket Responsible Engineer *Los Angeles, CA*

- Led design and optimization of sprocket and chain assembly, including front/rear sprockets, chain, and motor shaft
- Achieved 42% weight reduction in sprockets with topology optimization in Altair and FEA simulations on Ansys
- Drafted engineering drawings with GD&T standards, ensuring precise and cost-effective manufacturing of assembly
- Designed and poured custom CV boots, iterating through 5 versions of mold with novel dovetail slider mechanism, ultimately replacing dysfunctional boots to enable reliable protection of joint while reducing cost by 50%

Supermileage Vehicle October 2023 – Present
Hydrogen Lead *Los Angeles, CA*

- Led 3 project teams of over 30 members for the design and analysis of hydrogen fuel cell to meet 1 kW requirement for competition car, dividing work based on individual strengths and skills for efficient progress
- Ran CFD simulations with Ansys Fluent, ensuring optimized flowfield design for water removal and mass transfer
- Generated CAM with HSMWorks for manufacturing in house on 3-axis CNC, cutting costs by over $200
- Successfully integrated Horizon Fuel Cell with competition car, passing hydrogen technical inspection
- Created comprehensive Notion workspace and slides, ensuring organized documentation and knowledge transfer

Projects

Self Balancing Robot | Project Link Ongoing

- Developed an Arduino Nano-controlled self-balancing robot with IMU-based PID stability control
- Prototyped a custom 3D printed chassis with integrated sensor fusion for precise tilt estimation and control

Pen Plotter | Project Link September 2024

- Designed and 3D printed a custom CoreXY belt configuration pen plotter, featuring fully 3D printable recirculating ball bearing linear rails for precise, low-friction movement
- Developed a bitmap image to G-code slicer with Java/image processing algorithms, optimized for CoreXY control
- Integrated real-time G-code communication and interpretation on Arduino using Python and C++

Electric Go Kart | Project Link May 2024

- Led team of 4 in design, analysis, manufacturing, and assembly of a three-wheeled go kart with speeds of 15 mph
- Used plasma cutter, band saw, drill press, mill, lathe, laser cutter, and 3D printer to manufacture parts from recycled scraps, reducing total cost to under $100
- Innovated a single wheel steering with bevel gear mechanism to achieve significant weight savings over competitors