

Scotty Highlander

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Education

B.S. in Chemical Engineering University of California –Riverside (UCR) June 2026

GPA: 3.2/4.0

Relevant Coursework: Engineering Modeling & Analysis, Process Control, Chemical Engineering Laboratory, Fluid Dynamics

Awards: Dean's Honor List (2024, 2025), Bourns Foundation Engineering Scholarship

Technical Skills

Software & Programming: MATLAB, SolidWorks, AutoCAD, Aspen, PRO/II, Microsoft Office (Excel, Word, PowerPoint), Google Suite, AutoSketch, SuperPro Designer, Visio, Python, C/C++

Analytical Instruments: IR Spectrometer, UV-Vis Spectrometer, Liquid Chromatography, Gas Chromatography

Laboratory Techniques: Organic Synthesis, Purification, Titration, Distillation, Rotary Evaporation, Filtration, Crystallization, Centrifugation, Extraction, pH Measurement, Spectroscopy, Chromatography

Engineering Skills: 3D Design, Modeling and Simulation, Process Design, Process Control Systems,

Research Experience

Undergraduate Research Assistant Biomaterials Lab, UCR June 2024-June 2025

- Investigated surface treatment methods of Magnesium alloys for orthopedic applications
 - Conducted chemical etching tests on alloy surfaces, optimizing XYZ performance by 5%
 - Collaborated with 3 graduate research assistants on various biomedical R&D projects
 - Utilized XYZ equipment to perform exterior membrane modifications on Titanium implants, enhancing the antibacterial and osteogenic properties.
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Laboratory Experience

Chemistry Laboratory Courses, UCR (Tailor to the specific lab course) September 2023-June 2024

- Conducted experiments using UV-Vis, IR, TLC, and GC and analyzed spectrum data
 - Composed written technical reports, including experimental procedures, data analysis, results and conclusion
 - Complied with laboratory safety protocols for hazardous materials handling and experiment standard operating procedures (SOPs)
 - Gained 2+ years of hands-on lab experience through courses in General Chemistry, Organic Chemistry, and Chemical Engineering Lab
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Projects

Chemical Process Design Senior Design Project, UCR April 2026-Present

- Design and simulate a pilot-scale chemical plant for MTBE synthesis (100,000 metric tons/year) using SuperPro Designer, PRO/II, and Visio.
 - Develop process documentation including Flow Sheets, Piping and Instrumentation Diagrams (P&IDs), and control strategies.
 - Optimize production efficiency and economics through process control methods while prioritizing risk management.
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Leadership Experience

Treasurer American Institute of Chemical Engineers (AIChE), UCR March 2025-June 2025

- Maintained records of bank statements, business transactions, receipts, and reimbursements
- Coordinated 5 fundraising initiatives including sponsorship outreach, financial proposals, and merchandise sales, increasing funds by over \$3000.