

Van (Vivian) Duong

CONTACT INFORMATION Oakland, CA
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EDUCATION **University of California at Merced**
M.S. in Mechanical Engineering, Aug 2015

- Thesis Topic: Minichannel-tube solar thermal collectors for low to medium temperature applications
- Advisor: Dr. Gerardo C. Diaz

B.S. in Mechanical Engineering, May 2012

- Studied abroad at the Chinese University of Hong Kong (Fall 2011)
- Minor in Environmental Science and Sustainability

WORK EXPERIENCE **Mechanical Engineer**
Production Robotics–San Leandro, CA Aug 2020–present
Designing and building custom automation and robotic systems for clients in various fields and industries.

Mechanical Engineer II
Kinestral Technologies–Hayward, CA Sept 2019–June 2020

- Designed custom fixtures, tooling, and equipment to assist process engineering in data collection, measurement, inspection, and testing of product.
- Upgraded existing tools and equipment on the product development line to accommodate new material.
- R&D new and cost-effective upgrades on product line, as well as redesigned and prototyped cables and components for low-cost mass manufacturing.
- Designed new connector systems and cable assemblies for flexibility, ease of product installment and to reduce material cost in mass manufacturing. Communicated with vendors about design feasibility and complete turnkey capabilities.

Mechanical Engineer
CLEARink Displays–Fremont, CA Feb 2019–July 2019

- Designed high capacity rollable racks to be used in high vacuum chambers for display coating processes, saving up to 80% of total costs for each run compared to previous immobile rack.
- Aesthetically designed demo enclosures and kits encasing CID displays to be demonstrated and presented at conventions (i.e. SID Display Week) and meetings; CID won Display’s Week 2019 People’s Choice Award.
- Designed and printed tools and jigs in-house for lab and clean room using 3D printing (FDM, SLA) and urethane casting and molding.
- Troubleshooted and introduced new equipment to integrate new processes.
- Collaborated with different teams to design and develop in-house mechanical systems to capture and analyze failure and reliability of display samples.

Mechanical Design Engineer
Portable Power Innovations–San Jose, CA Sept 2018–Nov 2018

- Collaborated with engineering team to design EV battery modules and packs using SolidWorks.
- Built, assembled and troubleshooted EV battery prototypes under strict deadlines.
- Studied product issues and build processes to design tooling and manu-line equipment.

- Observed existing processes to recommend improvements and develop detailed work instructions.
- Developed relationships and communicated with vendors to reduce cost, increase quality and efficient manufacturing of components.
- Supported experiment design and testing to understand root cause of failures.

Mechanical Design Engineer

Pentagon Technologies–Hayward, CA

April 2017–July 2018

- Managed and worked on products from start to finish: from concept to design, built and tested prototypes, released and documented product. Communicated with vendors/suppliers. Worked with production team on assembly line to increase efficiency by identifying and troubleshooting any issues.
- Designed custom fan filter units for the semiconductor, MEMS, life science and solar industries.
- Created 3D models, assemblies, and detailed drawings for quoting, manufacturing and production.
- Developed technical specification sheets, procedures, assembly instructions and SOP.
- Utilized SolidWorks Flow Simulation to study air flow in probe prototypes for Pentagon Technologies Surface Particle Counters, as well as fan filter unit prototypes.
- Developed document control and release process/program for the Products Group. Setup and administrated PDM for engineering and design team for project management, revision control and archiving.

Installation Design Support Engineer

Aerotek, Randstad @ Bloom Energy–Sunnyvale, CA

Jan 2016–March 2017

- Managed, created and released all site installation related BOMs and part numbers.
- PDM admin for site workflows; modified and managed multiple workflows in SolidWorks PDM.
- Collaborated in developing an organized and centralized workflow process and program in Agile PLM to manage energy server (solid oxide fuel cell generator) installation projects from start to finish.
- Documented processes for utilizing SolidWorks PDM and Agile PLM for engineers.
- Supported Product Support group by creating 2D product drawings and SOPs. Supported NPI and PD Mechanical with drafting and fixing redline using SolidWorks.
- Assisted in Process Engineering lab: Ran experiments to investigate the failures and causes of cracks, the hardness quality and effects of seals in fuel cell stacks. Operated measurement equipment and software, Keyence and LabView, to run experiments.

Jr. Drafter

Nov 2012–Jan 2013

Deep Ocean Engineering (DOE), Inc.–San Jose, California

- Drafted and assembled CAD parts, created detailed drawings of parts and assemblies using SolidWorks for Deep Ocean’s T4N remote underwater operated vehicle (ROV).

Mechanical Engineering Intern

June 2012–Aug 2012

Alcoa, Inc.–Alcoa, Tennessee

- Designed for manufacturing in SolidWorks: safety and preventive fallback structures to be enforced at dangerous work sites in Alcoa’s aluminum cold mill.

RESEARCH
EXPERIENCE

Graduate Student Researcher

Aug 2013–Aug 2015

Diaz Research Group–University of California at Merced

1. Project: Copper-based minichannel solar collector

- Designed a copper-based minichannel-tubes solar thermal collector prototype for experimentation to observe and study steam generation and two-phase flow

in minichannel tubes. Developed a mathematical and computational model of two-phase flow in minichannel tubes calculating pressure drop and heat transfer coefficient.

2. Project: Aluminum-based minichannel solar water heater

- Compared the seasonal performance of an aluminum-based minichannel-tubes solar water heater versus conventional copper flat-plate solar water heater.

Undergraduate Research Assistant

May 2011–Aug 2011

Harmon Research Group–University of California at Merced

Project: Spatio-temporal distribution of metabolism estimates along the San Joaquin River (San Joaquin River Restoration Program)

- Performed synoptic water sampling in San Joaquin-Merced river.
- Collected data, organized and performed statistical analysis to gain better understanding of river management from the perspective of whole stream metabolism, and managed river response to flow variability and seasonal return.

PUBLICATIONS

S. K. Hota, V. Duong, G. Diaz, *Two-phase flow performance prediction for minichannel solar collectors*, Heat and Mass Transfer **56** (2020), no. 1, 109-120.

A. Robles, V. Duong, A. J. Martin, J. L. Guadarrama, and G. Diaz, *Experimental characterization of an aluminum-based minichannel solar water heater*, Solar Energy **110** (2014), 356-364.

V. Duong and G. Diaz, *Carbon dioxide as working fluid for medium and high-temperature concentrated solar thermal systems*, American Institute of Mathematical Sciences AIMS Energy Journal. **2** (2014), no. 1, 99-115.

CONFERENCE PROCEEDINGS

V. Duong and G. Diaz, *Performance of an aluminum-based minichannel solar collector for water heating applications*, In *SOLAR 2014*, pages 1-6, San Francisco, July 2014. American Solar Energy Society.

POSTER SESSIONS

V. Duong and G. Diaz, *Performance of an aluminum-based minichannel solar collector for water heating applications*, In *Poster at: California Energy Commission 40th Anniversary*, San Francisco, California, January 2015. **Showcased technology selected by the CEC.**

V. Duong and G. Diaz, *Prediction two-phase frictional pressure drop in copper minichannel solar water heater*, In *Poster at: UC Solar Symposium*, San Francisco, California, October 2014.

J. Lopez, A. Mendoza, T. De La Fuente, V. Duong and A. Badalov, *ElecTrac–Solar-powered Tractor*, In *Poster at: UC Merced’s School of Engineering: Innovate to Grow*, Merced, California, October 2012.

CONFERENCE TALKS

Performance of an aluminum-based minichannel solar collector for water heating applications, InterSolar/ASES SOLAR 2014, San Francisco, California. (July 2014)

TEACHING EXPERIENCE

Summer	2015	Teaching Assistant, Strength of Materials
Spring	2015	Teaching Assistant, Statics and Dynamics
Spring	2014	Teaching Assistant, Capstone Design
Fall	2013	Teaching Assistant, Heat Transfer

GRADUATE
COURSEWORK

- Computational Fluid Dynamics
- Radiative Heat Transfer
- Energy Storage
- Convective Heat Transfer
- Transport Phenomena
- Environmental Data Analysis

CERTIFICATION

Professional - Mechanical Design (CSP)
Dassault Systèmes
Credential ID# C-E6PS9K5BZV, May 2020

Associate - Additive Manufacturing (CSWA-AM)
Dassault Systèmes
Credential ID# C-UNVWSB6RD2, May 2020

Associate - Mechanical Design (CSWA)
Dassault Systèmes
Credential ID# C-JL4975NBSZ, April 2020

NFPA 70E: Standard for Electrical Safety in the Workplace 2017-18
360training.com
Credential ID# 000016481835, October 2019

SB 1343 Certificate of Completion
Progressive Benefit Group Online Training Academy
Credential ID# 13848164, October 2019

Fundamentals of Engineering/Engineer-In-Training (EIT)
California Board for Professional Engineers, Land Surveyors and Geologists
License# EIT 149298, May 2013

RELEVANT
SKILLS

- Programming: familiar with MATLAB, Engineering Equation Solver (EES), R, HTML, CSS
- CAD: SolidWorks, Draftsight, eDrawing, SolidWorks PDM
- FEA Simulation: SolidWorks Flow Simulation, some experience in COMSOL
- Laboratory and Research: design of experiments, data collecting/analysis, some experience with LabView, 3D Printing (FDM, SLA)
- Word Processing: LaTeX, Microsoft Office, OpenOffice
- Other: Agile PLM, Solidworks PDM, QuickBase, Salesforce, Axapta, JIRA, Confluence, Arena
- Languages: English, Cantonese (conversational)

AWARDS

May 2019 SID Display Week 2019 - People's Choice Award (CLEARink Display)

Jan 2015 Performance of an aluminum-based minichannel solar collector for water heating applications (V. Duong and G.Diaz). Showcased technology selected by the California Energy Commission (CEC) at CEC 40th Anniversary in San Francisco, CA

May 2014 Graduate Bobcat Fellowship (UC Merced)

August 2011 Benjamin A. Gilman International Scholarship

AFFILIATIONS

- Professional:
- American Solar Energy Society (ASES)
 - American Society of Mechanical Engineers (ASME)
 - International Solar Energy Society (ISES)
 - Engineers for Sustainable World (ESW)

Volunteer and Community:

- Team Captain, Ultraviolet Ultimate (Womxn's South Bay Team), 2019
- Solar Installer Volunteer at Grid Alternatives, Nov 2013
- Assistant Manager and Promotions Coordinator at UC Merced Bobcat Radio, 2010-2011
- Alumni and Justice League Member at Californians for Justice (CFJ), Nov 2004–Aug 2013