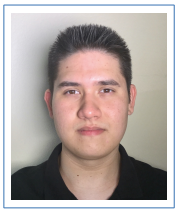
# Daniel **Van Der Maden**

*UC Berkeley - Computer Scientist*

*145 Del Mar Avenue*
*Berkeley, CA 94708*
*(714) 251-4974*
*dvandermaden0@berkeley.edu*
*github.com/Daniel-VDM*



## Education

Aug 2017 – Present **University of California - Berkeley**, *Bachelor of Arts*, *Computer Science*.
- *Areas of interest*: Natural Language Processing Human Computer Interaction and Data Management
- *Expected Graduation*: December (Fall Semester) of 2019
- *Current GPA*: 3.68/4.00

Aug 2014 – May 2017 **Irvine Valley College**, *Transferred*, *Computer Science*.
- *GPA*: 3.92/4.00

## Experience

Jan 2019 – May 2019 **Tutor**, UC Berkeley, EECS Self-Paced Center.
The EECS department at UC Berkeley provides self-paced courses where students can learn MATLAB, C, UNIX, C++, Java and Python. The course requires in person quizzes, project checkoffs and a final; all of which is handled by the tutors.
- *My responsibilities*: Grade quizzes and projects and answer student questions. I primarily tutored C, Java and Python.

Jan 2019 – May 2019 **Junior Mentor**, Computer Science Metors - UC Berkeley.
Part of the Computer Science Mentor organization (`https://csmberkeley.github.io/`) at UC Berkeley as a Junior Mentor. The organization's goal is to provide guidance and supplemental teaching sections for students taking computer sciences courses at UC Berkeley. My focus was to help students taking 'Designing Information Devices and Systems 1' (EECS 16A).
- *My responsibilities*: Prepare and conduct a 1:30 hr teaching section each week with a group of 5 students. Provide guidance for CS at UC Berkeley for said five students.

Aug 2018 – Dec 2018 **Academic Intern**, UC Berkeley.
Intern for the Structure and Interpretation of Computer Programs (CS 61A) course where I assisted course staff.
- *My responsibilities*: I was tasked with providing guidance and help on homeworks and projects for students that came to office hours. Also, I was tasked with conducting lab checkoffs as well as assisting course staff in answering questions during labs.

May 2018 – Aug 2018 **Software Engineer Intern**, Microsemi, Aliso Viejo, CA.
A summer internship with Microsemi's frequency and timing division where I worked on a modernized eLoran (radio navigation and data) system; which would function as a position, navigation and timing system that is similar to (but independent from) GPS.
- *My responsibilities*: I was tasked with efficiently implementing a proprietary eLoran scheme (in Python and C) on a Microsemi eLoran transmitter timing unit. Following that, I was tasked with creating a development tool/script that simulated said timing unit's behaviour so that anyone could work on a eLoran scheme without a physical timing unit. Lastly, I presented my work to the company's CTO and the rest of the project team at their frequency and timing division headquarters in Boulder, Colorado.

Jan 2016 – Jun 2017 **Single Variable Calculus Tutor**, Private Tutor, Orange County, CA.
I started to tutor single variable calculus (to reinforce my teaching and calculus skills) and eventually people offered to pay for my time. From spring of 2016 to fall of 2017, I had 2-4 students (through recommendations) that I tutored on a regular schedule.
- *My responsibilities*: Become familiar with different professor's lesson plans, and provide supplemental problem sets and solutions.

## Notable Projects - `https://github.com/Daniel-VDM`

Dec 2018 – Jan 2019 **Interactive Chat-bot**, *Personal Project*, (Python).
- *Repository link:* `https://github.com/Daniel-VDM/Seq2Seq-chatbot` (includes detailed description)

This implementation uses a sequence to sequence model which can be trained on any set of question-answer pairs.
- *Key features*: It has variable parameters for the model & data processing. Also, it uses a cache for quicker data reprocessing and it has the option to save & load models. Furthermore, it uses Name Entity Recognition to improve the perplexity of the model's responses. Lastly, it uses a more memory friendly way of training the model, therefore it can use relatively large training datasets

Oct 2018 – Dec 2018 **NP-Hard Problem Approximator**, *Efficient Algorithms Course Project*, UC Berkeley, (Python).
- *Repository link:* `https://github.com/Daniel-VDM/CS170_Project` (includes detailed description)

This program approximates a solution to the following problem: Given a group of children, friendship relations, $n$ buses and a set of trouble groups, find an assignment of students to the buses that maximizes the number of friendship relations that are in the same bus. The difficulty comes from this added condition: Groups of children that form a trouble group and are all assigned to the same bus do not have their friendships counted. The script uses a combination of greedy algorithms and local searches.
- *Achievements*: My group's script generated solutions that were in the top 10% of all approximations (relative to my pears). Also, I learned to coordinate and utilize the expertise of my team-mates as we all had different backgrounds (EE, Math and CS).

## Skills

Languages: Python, Java, C, C++, SQL, Scheme, x86 & RISC-V Assembly, LaTeX, HTML, CSS
Tools: PyCharm, IntelliJ Idea, CLion, Eclipse, Dreamweaver, Git VCS, Mercurial VCS,
Technologies: SciPy, Tensorflow, Keras, nltk, spaCy, NetworkX, AWS-EC2, MySQL, Linux, Mac OS, Windows, UNIX

## Relevant Coursework

- Efficient Algorithms & Intractable Problems
- Designing Information Devices and Systems 1 & 2
- Computer Architecture & Machine Structures
- Data Structures
- Structure and Interpretation of Computer Programs
- Natural Language Processing
- Intro to Linguistics
- Intro to Artificial Intelligence
- Intro to Cognitive Science
- Discrete Maths & Probability Theory
- Linear Algebra & Differential Equations

## Spoken Languages

| | | |
|---|---|---|
| English | **Native speaker** | |
| French | **Semi-fluent** | *I grew up in a French speaking country (Democratic Republic of Congo) and took AP French.* |
| Vietnamese | **Basic** | *I understand more than I can speak. I grew up in Vietnamese speaking household.* |

## References

| | | |
|---|---|---|
| Jay Standiford | **eLoran project leader during my time at Microsemi** | *(For privacy, contact details are provided upon request.)* |
| Rick Goerner | **Senior VP of sales during my time as Microsemi** | *(For privacy, contact details are provided upon request.)* |
| Jimmy Ong | **Single variable calculus tutor client** | *(For privacy, contact details are provided upon request.)* |
| Jeff Staszak | **My Mentor - Retired CEO of Volterra Semiconductors** | *(For privacy, contact details are provided upon request.)* |

## Interests/Hobbies

- Traveling
- Video Games
- Motor Sports
- Teaching
- Graphic Design
- 3D Printing