Dennis Tekell

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Education

Jun. 2015 – Aug. 2018 **U.C., Berkeley**, *BA in Physics, Applied Mathematics (double major)*, Berkeley, CA.
Transfer from Los Medanos College (LMC) in Pittsburg, CA.
Cumulative GPA: 3.75

Feb. 2018 – Jun. 2018 **Yonsei University**, *UCEAP*, Seoul, South Korea.
University of California Education Abroad Program (UCEAP) to take technical courses in a different environment/culture and vastly improve Korean language skills.

Work/Research Experience

Aug. 2017 – Feb. 2018 **Undergraduate Researcher**, *Mueller Group*, U.C., Berkeley.
- Development of a high-powered laser SEM component to improve electronic phase contrast microscopy, dramatically enhancing contrast of transparent and colorless objects by influencing the optical path.
- Specific contribution was focused on analyzing the scattering rate of light to determine the cleanliness of mirrors used within our lasers. This allowed us to quantify harmful defects (dust, oil smears, etc.) on the mirrors.

Aug. 2014 – May 2016 **Undergraduate Researcher**, *M3B (Micro-Mechanical Methods for Biology) Laboratory*, U.C., Berkeley.
- Development of photolithography-designed 3D-printed molds to fabricate microfluidic devices.
- Ran Monte Carlo simulations in Python & SolidWorks to estimate flow rate, potential obstructions of flow path, and laminar vs. turbulent flow predictions for microfluidic circuit designs.
- Played a significant role in sorting results and integrating them into a research paper. This report was accepted into *Nature* and inventions from the 12+ month project are currently being patented.

Jun. 2014 – Aug. 2014 **Biochemistry Intern**, *Sandia National Laboratories*, Livermore, CA.
- Full time internship to develop a targeted drug delivery device via biologically gated porous silica nanoparticles.
- Used Python & SQL to input microscopy photos, measure brightness of microparticle beads, and store data.
- Work included synthesis of lipids, peptide analysis, fluorescent microscopy, titration/solution preparation, and testing & analyzing enzyme reaction rates.

Projects

Nov. 2018 **Scheme Interpreter**, *Python, Scheme*.
- Built a working Scheme interpreter within Python as a properly functioning Read-Evaluate-Print Loop (REPL).
- Developed a program in Scheme to test the interpreter, which included functions to merge lists, partition lists, and list all possible sums of nodes from a tree.

Oct. 2018 **Ants vs. Bees Tower Defense**, *Python*.
- Created a *Plants vs. Zombies*-styled tower defense game with various types of bees that can be built to defend against enemy ants.
- Implementation of bees utilized object-oriented design and inheritance.

Sep. 2018 **Twitter Trends Analysis**, *Python*.
- Constructed a program that read in databases of tweets and word-sentiment correlations to analyze them and calculate an aggregate sentiment assessment.
- Created an expanded analysis by breaking down tweets and color mapping sentiment per state.

Technical Skills

Software: Python, SQL, LaTeX, MATLAB, Excel, LabVIEW, SolidWorks (in order of expertise)

Laboratory: Laser Operation (up to class 4b), Oscilloscope, Atomic Force Microscope (AFM), Single Laser Optical Trapping, General Microscopy, Titration, Chromatography, Filtration

Extracurriculars

Jan. 2014 – Aug. 2018 **President**, *Collegiate Debate*, U.C., Berkeley & Los Medanos College.
- Competed at a large number of tournaments each year, including the U.S. Championship 3 times and the World Championship in 2017. Resulted in over 10 speaker and placement awards – 3 first place.
- Spearheaded efforts at LMC to raise over $12,000 by student government and corporate sponsorships, nearly 100% increase of the yearly budget. Aided in raising $14,000 at Berkeley by hosting a high school debate tournament.