Takoua Bejaoui

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Job Title: Aerospace & Mechanical Engineer (focus in Controls & AI)

Technical Skills

COMPUTER LANGUAGES AND IDES	Python, C, C++, Google Colab, Jupyter Notebook, Java Script, PyCharm, Visual Studio Code
DATA & AI SPECIFIC	Data Visualization, Deep Learning, Machine Learning, Data Analytics, Neural Networks, CNN, RNN, LSTM, Exploratory Data Analyst, TensorFlow, Keras
ENGINEERING SPECIFIC	Control Systems Design, PCB Manufacturing, Embedded Systems Design, Manufacturing, Testing and Deployment, Project Engineer, HVAC, Wind Tunnel Testing, Chassis Design, Heatsink Design, CAD, LQR, PID, CFD, PID, Kalman Filter, GD&T, Orbital Dynamics, Hypersonic, Thermodynamics, Rocket Systems, Jet Propulsion, Space Mission Design
SOFTWARE	SOLIDWORKS, Creo/Pro-E, AutoCAD, ANSYS, CFD-FASTRAN, Microsoft Suite, QGIS, LabView, HTML/CSS, MATLAB, Final Cut-Pro, EPANET, Simulink, TinkerCad, CEA, Social Media Platforms, MAYA, GMAT, BlockChain, FARSITE, WindNinja, FDS

Education

San Jose State University
Bachelors of Science Mechanical Engineer 2014
Masters of Science Aerospace Engineering 2022
Masters of Science Mechanical Engineering 2022
(Graduation Year is Stated.)

Technical & Leadership Experience

Wildfire Interdisciplinary Research Center — San Jose State University (SJSU)
Research Assistant (RA) — Sept. 2021 to Current

- Development of an inverse model and a data driven wildfire simulator for wildfire forecasts using a variety of different data sources such as drone and satellite imagery.
- Data analysis, machine learning (ML) model development, and preparation of the reports as well as manuscripts.
- Research supported by the IBM Public Impact Project.

San Jose State University (SJSU) — San Jose, CA
Mechatronics Lab Instructor — Aug. 2020 to Jan. 2022

- Instructed and prepared mechanical and electrical engineering students for weekly labs that involved using embedded system design firmware, circuit simulations, and Circuit-Python.
- Initiated weekly trainings to familiarize with instructional duties
- Continuously provided constructive feedback towards students and employer to improve online/virtual learning environment.
- Teaching methods increased students' retention rates and score quality by 50% despite pandemic shutdown.

Whizz Systems, Inc. — Santa Clara, CA
Lead Mechanical Engineer — May 2013 to May 2018

- Main technical projects involved: chassis design, manufacturing and thermal analysis.
- Initiated the installation and integration of 3D-printing for external and in-house projects to reduce overall production costs and time. Thus, reduced production costs by 35%.
- Supervised and managed production and assembly procedures and processes. Trained staff for proper operations of machinery, as well as, assembly procedures for assigned projects. Hence, increased the skills set of operators and production efficiency by 25%.
- Effectively collaborated with sales department and multi-disciplinary teams . Conducted meetings and provided solutions for concerning issues , acted as the main stakeholder and was the Project Manager (PM) for all projects , as well as, for off shore teams. Hence, reduced prototype manufacturing and raw resource costs by 40%.
- Increased sales by 25% by providing best customer service to our clients. My quality of work transformed short-term customers, as well as, vendors, to long term.

BASE at SJSU — SJSU
Conference and Financial Chair — July 2021 to Current

- Planned, organized and deployed events that would benefit the Black and African American students in STEM at SJSU.
- Marketed the events via custom designed flyers and shared on various social media platforms, such as LinkedIn and Discord.
- Established a long-term networking and communication pipeline for BASE amongst industry representatives, professors with research opportunities for students and on-campus organizations and resources. Sent out and followed up on proposals regarding raised concerns amongst the Black and African American student populace with respect to their academic success.
- This resulted in an increase of allocated resources by 35% towards ensuring the inclusivity of marginalized students in STEM in the physical and academic spaces of the university.

Peer Connections and Spartan House Villages — San Jose State University (SJSU)
House Leader — Aug. 2021 to Jan. 2022

- As an executive member of the Black Alliance of Scientists and Engineers (BASE), I sought the opportunity to apply as a John Carlos House Leader. This house is for all the Black and African Americans in STEM.
- Guided freshmen and transfer Black and African American students towards avenues that promoted and inspired career building techniques.
- A lot of the events I've organized as an executive member (Conference and Financial Chair at BASE) were geared towards benefitting the Black and African American students' successes. This group has long been marginalized in the STEM industry, thus the vision of the events created were centered about maximizing their potential as hire-able candidates.
- Revitalized and repaired the pipelines amongst the University's organizations that supported Black and African American students' career and growth. Once the semester begun for Spring 2022, new study spaces, funding, invites to industry events, and outreach from external academic institutions towards the development of Blacks and African American students in STEM increased by 35%.

Research

Mapping and Correcting for Solar Gravity Perturbations via Artificial Neural Nets for Flyby Trajectories — June 2020 to July 2021
DOI: 10.13140/RG.2.2.18013.74723

Activities & Certificates

Kaggle and SJSU · **SVCC Datathon '21** — Dec. 2021

SJSU · **Black Engineering Science and Technology (BEST) Scholars** — Sept. 2021

Intelligent Systems Design and Controls · **SJSU Robotics Club**