SWARUP ALEX ZACHARIAH

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A Canadian Permanent Resident who is a self-taught full stack engineer and is passionate about building clean, robust, and novel web applications. Most comfortable with MERN stack but am always interested in learning new technologies and languages.

Skill:
Backend: JavaScript, Node.js, Python
Databases: SQL, MongoDB
Frontend: HTML 5, React, Bootstrap, Responsive Design
DevOps: Netlify, Google Cloud
Tools: Git, GitHub, Atom, Visual Studio

EXPERIENCE

Freelance Full Stack Developer. *Sep 2021 – present*

- Self-taught developer with help of *The Odin Project* and *Web development Bootcamp' by Dr. Angela Wu*.
- Currently building a *shopping website* that allows users to seamlessly order a weekly assortment of vegetables and fruits.
- Developing a snack recipe finder website that allows users to choose the ingredients they have, and then view results that best match their inventory.
- Making portfolio websites for an online musical website, help with colors, and random probability-based games.

Controls Engineer (Short-term contract), Ocado Engineering. *Oct 2021 – Dec 2021*

- Executed projects to fix critical components issues for Ocado Smart Platform advanced robots.
- On approximately 100+ robots, diagnosed and deployed code fixes, revised printed circuit boards, and provided solutions aimed at preventing fire hazards due to exposed battery spikes and charging contacts.

Senior Research & Development Verification Engineer, Ansys Inc. *Sep 2015 – Aug 2021*

- Supported development in areas of 3D design software in UI/UX functionalities, Application Programming Interface (API), and Graphics. Provided constant feedback based on design, implementation, and user integration reviews.
- Engaged with conception, development, execution, and implementation of Ansys software with developers.
- Created automated tests, performance tests, reliability tests, image tests, and customer verification tests based on varied part design, mechanical components, and assembly.
- Identified *400+ defects and enhancements* each year and executed *60+ feature-based projects* with my knowledge and expertise on Agile testing methodologies, Python, and Visual Studio.
- Responsible for regressions and support for *20000+ tests*.
- *90% improvement* in failure detection time as part of regressions webpage enhancements.
- Generated release-certification reports and step-by-step tutorials before rollout to customers every release.

<u>People Skills:</u>

- Used *communication* as a key component towards streamlining processes and achieving *timely* targets.
- *Resolved numerous inter-team conflicts* by collaborative active listening while steering teams to an effective acceptable outcome.

- Undertook *initiative* to solve *30+ customer issues* that was beyond the expertise of technical support.
- *Spearheaded* a novel regressions webpage enhancements project that led to *90% improvement* in metrics.
- *Mentored* multiple co-ops and interns through individualized training approaches.

Graduate Research Assistant, University of Cincinnati Simulation Center *Dec 2013 - Jul 2015*

- Developed computational modeling project for *new Proctor and Gamble (P&G) plastic product* on particle tracking. Executed under mentorship of a P&G Principal Engineer.
- Assisted with development, refinement, validation, and documentation of a new P&G product against in-house experiments, including: product survey, design, optimization, and solutions for complex and novel challenges within a transient fluid environment using high performance computing.
- Created geometry in SolidWorks, used AcuSolve for analysis, and Ensight for result visualization.
- Wrote user-defined python scripts to circumvent software limitations.

Engineer, Product, Life, and Engineering Services, Infosys ltd. *Jun 2010 - Jul 2012*

- Provided design consultation to assembly crew for reducing material wastage of aircraft wing components by *up to 25%*. Used AutoCAD to amend wing drawings based on airflow patterns and stress analysis.
- Improved solution efficiency and defect-free deliverables *from 80% to 98%*, which was recognized and appreciated by client.
- *Infosys's Star Performer Award* for contributions in design and analysis methods to improve team efficiency and work output.

ACADEMIC PROJECT EXPERIENCES

Graduate Student, University of Cincinnati *Aug 2012 - Aug 2015*

- Developed a predictive heat-transfer computational whole-body model for firefighters that was partially funded by the National Institute for Occupational Safety and Health (NIOSH) and by the Targeted Research Training (TRT) and the Pilot Research Program (PRP) of the University of Cincinnati. The predictive model identified heat-stress risk to firefighters by computing core body temperature, cardiac output, and stroke volume and comparing them against critical values.
- Created human-body geometry in SolidWorks and performed analysis through coupled equations using user-defined functions in Ansys Fluent.
- Experienced with grant writing that led to *successful TRT and PRP funding*.
- Compared three datasets of live-firefighting activities with model results, which was *published* in several journal and conference papers.
- *Won 3rd prize out of 200 students* in MS level poster presentation competition at the 7th World Congress of Biomechanics, Boston, 2014.

Student, final semester project, Karunya University *Dec 2009 - May 2010*

- Developed computational data for validating physical setup of a supersonic wind tunnel duct.
- Analyzed airflow inside a supersonic wind tunnel duct using Ansys Fluent, computed frictional losses, and estimated the run time of the setup. Verified simulations of flow over wedge shaped objects.

EDUCATION

Master of Science, Mechanical Engineering, University of Cincinnati, Cincinnati, USA. Aug 2015.

Bachelor of Engineering, Mechanical Engineering, Karunya University, Coimbatore, India. May 2010.