Tasneem Nejem

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EDUCATION

Bachelor of Civil Engineering **September 2020 – April 2025**

Carleton University, Ottawa, ON

RELEVANT SKILLS, EXPERIENCES AND ACCOMPLISHMENTS

Technical Skills

- Skilled in applying ETABS and SAP2000 to model and analyze structural systems under gravity and lateral loads, ensuring compliance with design codes and safety standards.
- Proficient in using Abaqus for Finite Element Analysis, including mesh sensitivity studies, stress visualization, and comparing theoretical and numerical results for structural and geotechnical applications.
- Applied SAP2000 for structural analysis in assignments and project, demonstrating the ability to model, analyze and interpret results for performance optimization.
- Developed 3D structural models using AutoCAD for projects and assignments, ensuring accuracy and alignment with design process.
- Demonstrated research and data analysis for design reports, to form the final design of the Roof Truss Design.
- Prepared professional reports and presentations using Microsoft Word, PowerPoint, and Excel, showcasing project progress.
- Skilled in Outlook and Microsoft Office Suite for task management, scheduling, and data analysis throughout project timelines.
- Proficient in MATLAB for data analysis, and problem-solving

Communication Skills

- Experienced in writing various lab reports and research papers, effectively communicating technical information.
- Prepared detailed conceptual and feasibility reports for a 10-story hotel design project, effectively presenting structural analysis, modeling results, and design insights.
- Collaborated with a team to summarize findings and deliver clear, concise presentations, ensuring effective communication of project goals and outcomes.
- Contributed to a collaborative effort on the Design of an Efficient Wind Turbine, demonstrating clear and concise communication skills in written reports and presentations.
- Collaborated with three team members to design, calculate, and write reports about trusses that will support the roof of hockey arena, to understand the engineering design process.

APPLIED PROJECTS

Data Analyzer, Problem Solver, Researcher **September 2024 – April 2025**

Design Project, 10 Storey Hotel

- Conducted a conceptual analysis for a 10-story concrete hotel, exploring structural system alternatives, failure modes, and sustainability considerations.
- Participated in interdisciplinary team meetings, contributing technical ideas and feedback throughout the design process.
- Collaborated with team members from various disciplines, integrating diverse perspectives into cohesive design solutions.
- Created a structured plan to complete the wind load calculations and adjusting timelines progress to the team and delivered a presentation on the calculation processes. Effectively communicated technical findings and project update with the project supervisor, ensuring feedback and timelines.
- Prepared a feasibility report with preliminary beam and two-way slab designs using Mathcad, validating lateral load results in ETABS for wind and seismic forces.
- Designed slender concrete columns to support the double-height space at the top floor, addressing buckling resistance and moment capacity in accordance with CSA A23.3.

- Completed detailed design of shear walls, including analysis of within and above plastic hinge regions. Used ETABS for pier selection and structural evaluation under seismic loading.
- Developed and documented Mathcad calculation files for selected wall piers, confirming compliance with structural design requirements.
- Designed a prestressed concrete beam for the 17 m-span bridge connecting the two towers, ensuring it meets strength and serviceability requirements.
- Integrated sustainability considerations into structural decisions, evaluating material efficiency and proposing design alternatives—such as optimized beam sizing and prestressed systems—to reduce embodied carbon and improve long-term performance.
- Assessed structural irregularities in the building design and conducted code-based checks to determine their impact on lateral load resistance.

Problem Solver **September 2024 - December 2024**

Reinforced and Prestressed Concrete Design Assignments

- Analyzed two-way slabs with beams and flat slabs, focusing on shear, torsion, and deflection for beams, while evaluating the impact of drop panels and their absence.
- Investigated the behavior of slender columns and prestressed concrete elements, ensuring compliance with CSA standards for strength and stability.
- Employed problem-solving strategies to optimize the design and meet serviceability and safety requirements in the concrete assignment.

Data Analyzer, Problem Solver **September 2023 - December 2023**

Structural Analysis II Assignments

- Utilized the Kassimali structural analysis computer program to analyze structures, determining joint displacements, member axial forces, and support reactions
- Used SAP2000 to analyze a 2-storey, 2-bay frame, determining support reactions and design forces for columns and beams
- Utilized the stiffness method for structural analysis of beams, frames, and trusses.

Researcher, Editor, Presenter - Group member **January 2022 - April 2022**

Communication Courses for Disciplines and Professions (CCDP)

Design of an Efficient Wind Energy Project

- Prepared proposal for desired project, demonstrating workability and applying engineering theory for renewable energy solutions.
- Demonstrated presentation skills, adept at engaging non- technical audiences and conveying information with clarity and impact.
- Utilizing article-based research to investigate project topics thoroughly for and writing it technical report for audience

Data Analyzer, Reviewer, Editor – Group Leader **January 2021 - February 2021**

Roof Truss Design Project

- Analyzed forces on the truss and determining member forces of the 3-iteration using excel
- Determined stress, strain and change in length of each member using excel and python software
- Edited the final report for accuracy and clarity

Designer **September 2020 - October 2020**

Visual Communication Project

- Design a 3D model of a mechanical object using AutoCAD (Fusion 360)
- Collected measurement of the components and assembled object
- Wrote a weekly report throughout the project
- Designed detailed floor plans, site plans, and key plans for residential properties using AutoCAD, ensuring precision and adherence to design specifications.