

VEDANG PATIL

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EDUCATION:

2022- Present	University of Illinois Urbana-Champaign MS Civil Engineering – Structures Coursework: Reinforced Concrete II, Structural Dynamics, Structural Mechanics, Earthquake Engineering, Finite Element Methods, Steel Structures II, Design of Tall Buildings, Wind Engineering, Structural Design Optimization, Probabilistic Loads & Design, Construction Optimization	(CGPA 3.65/4)
2018- 2022	MIT World Peace University India B.Tech Civil Engineering	(Gold Medalist CGPA 9.84/10)

INTERNSHIP EXPERIENCE:

June - Dec 2023	Thornton Tomasetti <ul style="list-style-type: none">Performed modeling of multiple RC, Steel and Composite residential, commercial and heritage structures.Performed lateral analysis and design detailing of multiple structures subjected to wind loads and floods loads as per ASCE 7 and FBC and considering progressive collapse mechanisms.Prepared calculation packages for Foundation and Master permits and reviewed shop drawings from subcontractor to ensure conformity with structural drawings. Prepared Structural inspection reports.
May - June 2021	SS Patane and Associates <ul style="list-style-type: none">Studied and reviewed various working drawings.Performed Structural analysis, modeling and design and developed a special moment resisting frame for a G+11 storey structure as per IS 456, IS 1893 and IS 875, IS 13920 to optimize reinforcement quantities to provide economical sections and also reduce wind and earthquake loads and resist first mode torsion.Performed Structural analysis and design of G+2 bungalow situated on sloping contour with lateral forces on the front columns and provided additional reinforcement in the grade beam to design foundation accordingly.Performed Structural audits and prepared audit reports for conservation projects.

PROJECTS AND PUBLICATIONS:

Seismic performance of Ferrocement LGS Composite wall panel

Developed a FE ABAQUS model and a macro ETABS model of Ferrocement LGS. Ground motion data of 25 earthquakes were analyzed, scaled by considering PGA values. This calibrated model (1 & 2 storey) was then subjected to all the time histories, 3000 simulations to develop Incremental dynamic analysis and Fragility curves, the results of which are now used for developing IS Code.

Holocaust Museum, FL

Prepared loading diagrams, column load takedown and designed spread footing and wall strip footings using spCol, S-Concrete, Tekla Tedds and Retain Pro. Modeled and performed vibration analysis of monumental stairs using SAP2000. Prepared submittal calculation packages for Foundation and Master permit.

Commercial Tower, FL

Modeling and Lateral load analysis of 1000 ft tower with outriggers and belt wall system using ETABS as per governing flood loads and wind loads from tunnel testing. Designed foundation for 170 ft deep piles using S-Concrete and Tekla Tedds. Used Rhino Grasshopper environment to model slabs from Revit and BIM360.

“An Experimentation on the properties of Geo-polymer concrete with fibers”

Scopus

“Structural Assessment of Composite Concrete Members for Waterproofing and Thermal Insulation”

Springer

“Comparison Of Properties of Concrete Having Basalt and Polypropylene Fibre”

Scopus

SKILLS

Analysis/Design : ETABS, SAP2000, SAFE, ACAD, Revit, Rhino, spCol, spBeam, S-Concrete, Tedds Tekla, RAM Concept, Solidworks

Others: MATLAB, Simulink, C, Python, Eneclac, MathCAD, Bluebeam Revu, Microsoft Office Suite

Codes: ACI 318-19, AISC-2015, ASCE 7-2022, IBC-21, Florida BC, IS456:2000, IS1893:2016, IS13920, IS1343, IS875 - I, II, III, V

ACHIEVEMENTS

- JN Tata Endowment Scholar 2022-24
- Max Zar Scholar 2023-24 (SEAOI)
- MIT WPU Civil Tech Fest- 2nd position

EXTRACURRICULARS

Innovators Hub, Ionosphere, INEW Technologies - founder
ASCE, AISC, ACI, CTBUH, SEOI and ISSE - member
Structural Engineering GSO (Secretary)