MOHIT GUPTA

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EDUCATION

Aug'21 – Present
Ph.D. in Civil Environmental and Sustainable Engineering, Arizona State University, USA, CGPA – 4.0/4.0
Research Area: Developing AI/ML solutions for the construction industry with a focus on semi-supervised and unsupervised learning.

Aug'19 – May'21
M.Tech. Design Engineering, Birla Institute of Technology & Science, Pilani, India, CGPA – 9.62/10

Aug'11 – May'15
B.E. (Hons.) Civil Engineering, Birla Institute of Technology & Science, Pilani, India, CGPA – 9.19/10
Thesis: Integrating earthquake-resistant design with Building Information Model (BIM).

SKILLS

Languages:
Python, Matlab

Relevant Courses:
Statistical Machine Learning,
Image Informatics and Analytics,
Deep Learning Specialization

Software:
Autodesk-Revit, Navisworks,
AutoCAD, Unity

ACHIEVEMENTS

Rank-1 in master's program.

All-India Rank 88 out of more than 150,000 applicants in GATE 2018.

Recipient of 'Merit' scholarship throughout the undergraduate program.

PUBLICATIONS

M Gupta, C Wei, T Czerniawski. **Automated valve detection in piping and instrumentation (P&ID) diagrams**. *In International Symposium on Automation and Robotics in Construction, USA, 2022, USA*.

C Wei, M Gupta, T Czerniawski. **Automated wall detection in 2D CAD drawings to create digital 3D models**. *In International Symposium on Automation and Robotics in Construction, 2022, USA*. (Nominated for Best Paper award)

SB Singh, S Awasthi, M Gupta, P Kiran, A Garg. **In-plane strengthening of masonry walls with fiber reinforced polymer**. *In National Conference for Sustainable Infrastructure Development, 2014, India.*

SB Singh, S Awasthi, M Gupta, P Kiran, A Garg. **Study on improving the resistance of masonry walls subjected to out of plane loads**. *In National Conference for Sustainable Infrastructure Development, 2014, India.*

M Gupta, A Gupta, R Gupta. **Is India Bim Ready?** i*n The Masterbuilder, 2014.*

EXPERIENCE

Research collaboration, EPFL, Switzerland
July-Aug'22

Developed a deep learning glare prediction model. Trained over facial images of participants and HDR images.

Summer Intern, TU Munich, Germany
July-Aug'22

Worked on developing 3D volumetric scene representation with Nerfs using only 2D images. Goal is to compare Neural Network scene approximation with conventional Photogrammetric techniques like Sfm.

Senior Engineer, THDC India Limited, India
2018-21

Ensured BIM coordination and quality assurance; BIM-enabled quantity estimation; 4D simulations for logistics planning and field layout drawing production

BIM Engineer, Vconstruct Pvt. Ltd., India
2015-16

Modeling of concrete, rebar, PT cables, formwork, and scaffolding for coordination of concrete scope of work with other trades. Use of BIM for visualization in daily subcontractor meetings and formwork panels optimization.

Intern, Techture Private Limited, India
2014

Workflow generation for structural modeling, quality checks, and rebar detailing. BIM-enabled multi-disciplinary trade coordination.

Teaching Assistant, Birla Institute of Technology and Science, Pilani, India
2014- 15

Teaching Assistant for an undergraduate course of Hydraulics Engineering.

REFERENCES

Dr. Thomas Czerniawski

Head of Edifice lab & Assistant Professor, School of Sustainable Engineering and the Built Environment, Arizona State University

Email:
Thomas.Czerniawski@asu.edu

Dr. Anupam Singhal

Professor & Head, Department of Civil Engineering, Birla Institute of Technology and Science, Pilani, India

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anupam_singhal@pilani.bits-pilani.ac.in

COMPUTER VISION PROJECTS

Wall-detection on 2D construction drawings and automated 3D pop-ups
- Trained a neural network to detect walls and link the outputs to Dynamo (in Autodesk-Revit) enabling automatic 3D generation.

Automated valve-detection on Piping and Instrumentation drawings.
- Developed a semi-supervised learning algorithm which classifies construction symbols with zero annotations.

Semantic segmentation of polyps in colonoscopy video
- Polyp localization with U-net model in an imbalanced dataset.

Glare prediction from Facial and HDR images
- Developed a deep learning model for glare prediction. Experiments contain data of electrochromic and color-neutral glazing.