MADHUMITHA SENTHILVEL

PhD Candidate | Wissenschaftliche Hilfskraft

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🌐 https://dc.rwth-aachen.de/en/team/team/madhumitha-senthilvel 🔗 madhumithasenthilvel ⓖ sbalot

EDUCATION

PhD Candidate
RWTH Aachen University

📅 October 2018 – Ongoing 📍 Aachen, Germany

- Linking and validating information in Common Data Environments using SHACL and ICDD

Master of Science: Research Scholar
Indian Institute of Technology Madras

📅 June 2014 - Nov 2017 📍 Chennai, India

- Automated Construction Progress Monitoring using Range Imaging

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Bachelor of Technology (Hons.)
SASTRA University

📅 June 2009 - May 2013 📍 Thanjavur, India

- Civil Engineering

RESEARCH EXPERIENCE

Research Assistant
Design Computation Chair, RWTH

📅 March 2018 – Ongoing 📍 Aachen, Germany

- Participation in Teaching and Thesis supervision activities

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Teaching Assistant
Indian Institute of Technology Madras

📅 June 2014 – June 2017 📍 Chennai, India

- syllabus content framing and coordination for conducting Construction Project Planning and Control Course for NPTEL
- mentoring 2 undergraduate students on their term projects in computer vision for construction applications

PROFESSIONAL EXPERIENCE

Graduate Engineer Trainee
EPMCR Pvt. Ltd.

📅 July 2013 – June 2014 📍 Chenna, India

- Metro Rail segmental structures erection methodology temporary structures proof check,
- Project Management,Scheduling, structural designing of RCC residential buildings, water supply network design, development of automated tool for timber formwork design

RESEARCH INTERESTS

Building Information Modelling (BIM)

AI in Construction

Semantic Web / Linked Data in AEC

CURRENT PROJECTS

ISO 21597-2:2020 Information Container for linked Document Delivery
ISO Standard

- Part of the Working Group for ICDD-Part 2
- Focussing on SHACL validation using ICDD Ontology

BIM4Ren
European Commission

📅 2018-2022

H2020 funded project involving 23 partners spread across 10 countries focusing on exploitation of BIM potential for the energy renovation of existing buildings for the whole construction value chain

ACHIEVEMENTS

🏆 **DAAD Scholarship**
For pursuing doctoral research ar RWTH

🏆 **1st Place in Hackathon**
7th Linked Data in Architecture and Construction 2019

🏆 **Half-Time Research Assistantship**
Awarded for 3 years by Ministry of Human Resource and Development through IIT Madras

🏆 **3rd place at Computer Vision Competition**
Mixels competition on using computer vision for object recognition at Shaastra 2017, IIT Madrase

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🏆 **DEAN'S LIST Scholarship**
meritorious academic performance in the top 10% of University for the year 2011-2012 in a batch of 2000 students in Bachelor's degree

Summer Intern
EPMCR Pvt. Ltd.

📅 May - June 2012   📍 Chennai, India

- Preparation of alternatives and geometrical design for widening of existing two-lane road, design of road pavement, median, curbs, drains, street lighting, road markings
- quantity estimation, Bill of Quantities and technical specifications
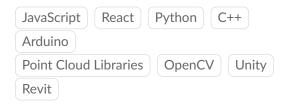
PUBLICATIONS

👥 Conferences

- Senthilvel, M., Beetz, J., 2020, A Visual Programming Approach for Validating Linked Building Data, to be presented in the 27th International Workshop on Intelligent Computing in Engineering, July 2020, Berlin, Germany.
- Senthilvel, M., Oskari, J., Beetz, J., 2020, Common Data Environments for the Information Container for Document Delivery, to be presented at the 8th International workshop on Linked Data in Architecture and Construction (LDAC), Dublin, Ireland
- Werbrouck, J. M., Senthilvel, M., Beetz, J., Pauwels, P., 2019, Querying heterogeneous linked building datasets with context-expanded GraphQL schemas, 7th International workshop on Linked Data in Architecture and Construction (LDAC), June 2019, Lisbon, Portugal
- Werbrouck J. M., Senthilvel, M., Beetz, J., Borreau, P., van Berlo, L.,2019, Knowledgebased web services for BIM-based Renovations for Residential Buildings, July 2019, Leuven, Belgium
- Werbrouck J. M., Beetz, J., Pauwels, P., Senthilvel, M., van Berlo, L., Bonduel, M., 2019, Towards a decentralized web-interface for connecting various datasets, CIB W78, September 2019, Northumbria, UK
- Senthilvel, M., K.S, Ranjith and Varghese, K., 2017. Comparison of hand-held devices for 3D reconstruction in Construction. Proc. of International Symposium on Automated and Robotics in Construction 2017 pp. 698-705, Taipei, Taiwan.
- Pushkar, Akash, Madhumitha Senthilvel, and Koshy Varghese. "Automated progress monitoring of masonry activity using photogrammetric point cloud." ISARC. Proceedings of the International Symposium on Automation and Robotics in Construction. Vol. 35. IAARC Publications, 2018, Berlin, Germany.
- Sivapriya, V., Madhumitha Senthilvel, and Koshy Varghese. "Automatic Reassembly of Fragments for Restoration of Heritage Site Structures." ISARC. Proceedings of the International Symposium on Automation and Robotics in Construction. Vol. 35. IAARC Publications, 2018, Berlin, Germany.
- Senthilvel, M., Varghese, K., Ramesh Babu, N., 2016. Building Information Modeling for Precast Construction: A Review of Research and Practice. Proc. of Construction Research Congress 2016 pp. 2250- 2259, San Juan, Puerto Rico.

👥 Journal

- Vel, M. S., Agarwal, N., Dinesh, R., Suribabu, C. R., 2014. Spatial Approach for Preliminary Design of Real Water Distribution Network. Asian Journal of Applied Sciences, 7(6), 414-423.

COMPETENCIES

JavaScript   React   Python   C++
Arduino
Point Cloud Libraries   OpenCV   Unity
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LANGUAGES

English   ● ● ● ● ●

German   ● ● ● ○ ○

Tamil   ● ● ● ● ●

Malayalam   ● ● ● ○ ○

Hindi   ● ● ○ ○ ○