Somnath Dutta

Date of birth: [redacted]

Nationality: Indian

Gender: Male

CONTACT

[redacted]

WORK EXPERIENCE

15/11/2021 – CURRENT – Pisa, Italy

Assegno di ricerca (Nausicaa 3466- 13/10/2021)

Consiglio Nazionale delle Ricerche -ISTI

- Development of Software prototype(Marine technology) based on multi-modal sensor data and mapping
- State-of-art technology, Data acquisition, analysis, and integration
- Virtual camera rendering of 3D scene with real-time remote visualization

01/06/2021 – 10/11/2021 – Berlin, Germany

Software developer

Eagle eye technologies GmbH

Sector: Large Scale Mobile Mapping of Urban environment

- Research and Software development for Mobile Mapping using inertial (IMU, GPS, GNSS) and multiple visual sensors (Lidar, Cameras), Photogrammetry
- Geometry & Artificial Intelligence technique for damage inspection of highways, and streets based on the 3D point cloud, Images
- Implementation of a robust Calibration pipeline for lidar sensors
- Analysis of Data (point cloud, images) for quality improvement and information extraction

01/11/2019 – 31/05/2021 – Lindau, Germany

Computer Vision Engineer

Denso ADAS Engineering Services GmbH

- Software Algorithm Development in the domain of Point Cloud Processing (Feature Analysis, Topological Maps)
- State-of-the-art research & technology review (3D Computer Vision, Point Cloud Processing)
- Implementation of prototype and validation of research technology on real-time data
- Sensor Data Fusion for depth completion (Deep Learning Technology)
- Application Domain: Automotive

06/01/2017 – 30/09/2019 – Dresden, Germany

University research assistant

Technical University Dresden

- Domain:3D Data Acquisition (structured light scanner,, RGBD Device), Point Cloud Processing, 3D Reconstruction
- Algorithm Development for post-processing of data including noise filtering, alignment of point clouds
- 3D geometric analysis of point-based surface representation
- focus on aspects of differential geometry, linear algebra
- review of existing research methodology, analysis, planning & execution of the research project

10/09/2014 – 14/08/2015 – Gurgaon, India

Researcher

Tata Consultancy Services

- Research in the field of Computer Graphics and Vision
- AR based tool development for interactive data exploration for precise & quick localization of components related to vehicle function
- Prototype Development

09/09/2010 – 31/08/2014 – Kharagpur, India

Project Associate

Dept of E &ECE,IIT Kharagpur

- 3D data acquisition using an in-house developed laser scanner
- Main Focus Area: Digitization of Cultural Heritage(Development of 3D Acquisition system, surface generation & processing to generate high-quality 3d models)
- Mesh generation & processing (denoising, sampling)

EDUCATION AND TRAINING

02/01/2011 – 26/08/2014 – Kharagpur, India

M.Sc

IIT Kharagpur

Main Sbjects: Computer Graphics, Algorithm, Computer Vision, Mesh Processing, Data structures,Image Processing

Research Area of Master's work: Surface Triangulation, Mesh Processing

Address Kharagpur, India | **Website** http://www.iitkgp.ac.in/ | **Field of study** Computer Science | **Final grade** 1.9 | **Level in EQF** EQF level 7 | **National classification** Master Degree | **Thesis** 3D Data Synthesis by inhouse Acquisition & Improved Denoising

09/08/2005 – 26/08/2009 – Kolkata, India

Bachelor of technology

WBUT (currently MAKAUT)

Digitial Communication, Programming & Data Structures, Engineering Electronics, Digital Image Processing

Address BF Block, Sector 1, Bidhannagar, Kolkata, India | **Website** https://makautwb.ac.in/ | **Field of study** Electronics & Communication | **Final grade** 2.1 | **Level in EQF** EQF level 6 | **National classification** Bachelor Degree | **Thesis** Obstacle Detection using ampping and gp2d sensor

PUBLICATIONS

3D Point Set Registration based on Hierarchical Descriptors

2022 http://wscg.zcu.cz/DL/wscg_DL.htm
Somnath Dutta, Benjamin Russig, Stefan Gumhold

Journal of WSCG Proceedings 2022 30 (DOI: 10.24132/JWSCG.2022.6), 10

http://wscg.zcu.cz/WSCG2022/2022-WSCG-Papers-Separated.html

Moving Least Squares Correspondences for Iterative Point Set Registration

2019 www.nbn-resolving.org/urn:nbn:de:bsz:14-qucosa2-357218
Somnath Dutta, Benjamin Russig, Stefan Gumhold

Technical Report TUD-FI19-03 August-2019

Mesh Denoising Based on curvature based Saliency

2015 https://doi.org/10.1007/978-3-319-16631-5_37
Somnath Dutta, Sumandeep Banerjee, Prabir Kr.Biswas, Partha Bhowmick

In the proceedings of ACCV 2014

https://link.springer.com/chapter/10.1007/978-3-319-16631-5_37

Mesh Denoising by Improved 3D Geometric Bilateral Filter

2013 10.1109/NCVPRIPG.2013.6776193
Somnath Dutta, Sumandeep Banerjee,Prabir Kr. Biswas, Partha Bhowmick

In the proceedings of NCVPRIPG 2013

https://ieeexplore.ieee.org/document/6776193

A Low-Cost Portable 3D Laser Scanning System with Aptness from Acquisition to Visualization

2013 10.1109/DigitalHeritage.2013.6743729
Sumandeep Banerjee,Somnath Dutta, Prabir Kr.Biswas, Partha Bhowmick

In the proceedings of Digital Heritage international Congress 2013, Marseille

https://ieeexplore.ieee.org/document/6743729

Parallel Mesh Regularization and Resampling Algorithm for Improved Mesh Registration

2013 10.1109/NCVPRIPG.2013.6776183
Sumandeep Banerjee, Somnath Dutta,Prabir Kr. Biswas, Partha Bhowmick https://ieeexplore.ieee.org/document/6776183

PROJECTS

10/09/2010 – 31/08/2014

Digitization of Cultural Heritage (Research project funded by Department of Science & Technology, Govt. of India)

3D Acquisiton (laser Scanner) hardware, Software pipeline for data acquistion, processing, 3d model generation

06/01/2017 – 30/08/2019

Fast Haptic(Research project funded by BMBF, Germany)

https://de.fast-zwanzig20.de/gesundheit/fast-haptic/

Technologies of real-time intermodal communication for mobile electronics, teleoperation and immersion in virtual worlds for the representation of virtual objects in real time

TECHNICAL SKILLS

Software Development & Open Source Tools

Programming Language: C, C++

Scripting tools: Python

Open Source Libraries: Point Cloud Tools (PCL, CGAL), Computer Vision Libraries, Linear Algebra

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Pisa, 05/10/2022

Somnath Dutta