

## ANH VU VO

Postdoctoral Research Fellow  
School of Computer Science  
University College Dublin

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### EDUCATION

#### **University College Dublin**, Dublin, Ireland

Doctor of Philosophy Thesis: "Spatial Data Storage and Processing Strategies for Urban Laser Scanning" 2013-2017

#### **University of Melbourne**, Victoria, Australia

Masters of Engineering Structures 2011-2012

#### **Ho Chi Minh City University of Architecture**, Ho Chi Minh City, Vietnam

Bachelors of Engineering 2004-2009

### PROFESSIONAL EXPERIENCE

09/19 – present Postdoctoral Research Fellow, School of Computer Science, University College Dublin, Ireland

07/18 – 08/19 Research Scientist, Center for Urban Science and Progress, New York University, U.S.A.

06/17 – 07/18 Postdoctoral Associate, Center for Urban Science and Progress, New York University, U.S.A.

12/16 – 06/17 Assistant Research Scientist, Center for Urban Science and Progress, New York University, U.S.A.

09/14 – 10/14 Visiting Researcher, 3D Geo-information, Urbanism, Architecture and the Built Environment, Delft University of Technology, the Netherlands

09/09 – 04/13 Lecturer, University of Architecture in Ho Chi Minh City, Department of Civil Engineering, Vietnam

### GRANTS

#### **XSEDE Research Allocation**

(eXtreme Science and Engineering Discovery Environment) 2018  
Project: Multiple Geospatial Data Integration in a Distributed Environment  
Role: allocation manager, drafted the proposal  
Awarded resources (monetary equivalence: \$56,208.97)

## HONORS, AWARDS, AND RECOGNITION

### Top 25 most cited ISPRS articles since 2015 (116 citations)

International Photogrammetry and Remote Sensing Society 2018  
<https://www.journals.elsevier.com/isprs-journal-of-photogrammetry-and-remote-sensing/most-cited-articles>

### First Prize of the 2015 IEEE GRSS Data Fusion Contest (3D Track)

IEEE Geoscience and Remote Sensing Society 2015

### Endeavour Postgraduate Awards for postgraduate study

Australian Government 2011

### Loa Thanh Award for Excellent Graduation Dissertation

Vietnamese Ministry of Education and Training, Ministry of Construction, Architect Assoc., Construction Assoc. and Ho Chi Minh Youth Union 2009

## JOURNAL PAPERS

**AV Vo**, D Laefer, S Zolanvari, A Smolic (2019). Per-point processing for detailed urban solar estimation with aerial laser scanning and distributed computing. *ISPRS J Photo & Rem Sens*. DOI: 10.1016/j.isprsjprs.2019.06.009

D Laefer, **AV Vo**, M Bertolotto (2018). A spatial-temporal index for aerial full waveform laser scanning data. *ISPRS J Photo & Rem Sens*. DOI: 10.1016/j.isprsjprs.2018.01.012

**AV Vo**, D Laefer, M Bertolotto (2016) Airborne laser scanning data storage and indexing: State of the art review. *ISPRS J Photo & Rem Sens* DOI: 10.1080/01431161.2016.1256511

P Nourian, R Gonçalves, S Zlatanova, K Ohori, **AV Vo** (2016). Voxelization Algorithms for Geospatial Applications: Computational methods for voxelating spatial datasets of 3D city models containing 3D surface, curve and point data models. *MethodsX*, DOI: 10.1016/j.mex.2016.01.001

**AV Vo**, L Truong-Hong, D Laefer, D Tiede, S d'Oleire-Oltmanns, A Baraldi, M Shimoni, G Moser, D. Tuia (2015). Processing of extremely high resolution LiDAR and optical data: Outcome of the 2015 IEEE GRSS Data Fusion Contest. Part B: 3D contest. *IEEE J. Selected Topics in App Earth Observ & Rem Sens*. DOI: 10.1109/JSTARS.2016.2581843

**AV Vo**, L Truong-Hong, D Laefer, M Bertolotto (2015). Octree-based region growing for point cloud segmentation. *ISPRS J Photo & Rem Sens* DOI:10.1016/j.isprsjprs.2015.01.011

## CONFERENCE PAPERS

- AV Vo**, D Laefer (2019). A Big Data approach for comprehensive urban shadow analysis from airborne laser scanning point clouds. In: ISPRS Ann. Photogramm. Remote Sens. Spatial Inf. Sci., ISPRS WG IV-4/W8, Singapore, Sep, 2019. DOI: 10.5194/isprs-annals-IV-4-W8-131-2019
- AV Vo**, N Chauhan, D Laefer, M Bertolotto (2018). A 6-dimensional Hilbert approach to index full waveform LiDAR data in a distributed computing environment. In: ISPRS Archives, ISPRS WG IV/7 Symp, Delft, The Netherlands, Oct, 2018. DOI: 10.5194/isprs-archives-XLII-4-671-2018
- AV Vo**, N Konda, N Chauhan, H Aljumaily, D Laefer (2018). Lessons learned with laser scanning point cloud management in Hadoop HBase. In: Smith I, Domer B (eds) Advanced Computing Strategies for Engineering. EG-ICE 2018. Lecture Notes in Computer Science, vol 10863. Springer, Cham. DOI: 10.1007/978-3-319-91635-4\_13
- S. Zlatanova, P. Nourian, R. Gonçalves, **AV Vo** (2016). Towards 3D raster GIS: On developing a raster engine for spatial DBMS. In: Proc. of ISPRS WG IV/2 Wksp: Global Geospatial Information and High Resolution Global Land Cover/Land Use Mapping, Novosibirsk, Russian Federation, Apr, 45-60
- AV Vo**, L Truong-Hong, D Laefer (2015). Aerial laser scanning and imagery data fusion for road detection in city scale. In: 2015 IEEE International Geoscience and Remote Sensing Symposium, Milan, July, 2015. DOI: 10.1109/IGARSS.2015.7326746

## ARCHIVED DATA SETS

- D Laefer, AV Vo. (2019). 2019 LiDAR Data Collection in Sunset Park, Brooklyn, New York. URL: <http://hdl.handle.net/2451/60458>
- D Laefer, S Abuwarda, **AV Vo**, L Truong-Hong, H Gharibi. (2017). 2015 Aerial Laser and Photogrammetry Survey of Dublin City Collection Record. DOI: 10.17609/N8MQ0N

## INVITED TALKS (Non-conference)

- "Point cloud enrichment and its implications for web service development", Open Geospatial Consortium (OGC) technical committee meeting, Charlotte, North Carolina, U.S.A., December, 2018
- "A hybrid indexing strategy for efficient airborne LiDAR data management", OGC technical committee meeting, Newfoundland, Canada, June, 2017

“Where spatial data science meets civil engineering infrastructure”, Department of Civil Engineering, Northwestern Univ, U.S.A., May, 2016

“3D voxelization and its applications for laser point cloud segmentation”, Gist. Section, TU Delft, the Netherlands, October, 2014

### **INVENTION DISCLOSURES**

**AV Vo**, L Truong-Hong, D Laefer (2015). Automated assessment of road and footpath surface conditions using point clouds derived from laser scanning and digital imagery data. Invention disclosure filed Nov. 30

### **TEACHING CONTRIBUTIONS**

Urban Sensing, Graduate Level, New York University, Spring 2018, 2019

LiDAR and Geospatial Data Analysis, Undergraduate Level, Vertically Integrated Projects Program and Summer Research Program, NYU Tandon School of Engineering, New York University, 2017, 2018

LiDAR Crash Course, High School Level, Applied Research Innovations in Science and Engineering, Summer 2018

### **SUPERVISION EXPERIENCE**

Chauhan, Neel, “Big Data for urban engineering” and “Asynchronous Java servlet for HBase” Feb 2017 - current

Bamme, Shreya “High-resolution 3D urban data visualization on the web using CesiumJS”, Jun 2018 – Mar 2019

### **PROFESSIONAL CONTRIBUTIONS**

Co-Chair, 2021 3D GeoInfo Conference	2021
Reviewer Board Member, Remote Sensing	since 2019
Reviewer, Survey Review	since 2018
Reviewer, ISPRS Journal of Photogrammetry and Remote Sensing	since 2018
Reviewer, ACM Transactions on Spatial Information and Systems	since 2017
Reviewer, ACM Transactions on Graphics	since 2015
Reviewer, Pattern Recognition Letters	since 2015
Reviewer, ASCE Journal of Computing in Civil Engineering	since 2015

### **PROFESSIONAL SOCIETY AFFILIATION**

Individual Member, American Society of Photogrammetry and Remote Sensing  
2018 – current

Official Technical Representative of NYU Center for Urban Science and Progress,  
Open Geospatial Consortium 2017 – 2019

## **TECHNICAL SKILLS**

Programming languages: Java, Javascript, Python, C++, SQL, Matlab

High performance computing platforms and data analytic tools: Apache Spark, Apache Hadoop MapReduce, Apache HBase, Jupyter Notebook

LiDAR and spatial data analytic software: lastools, pulsewaves, liblas, PDAL, GDAL, SPDLib, FME Workbench, Google Earth Engine

Spatial visualisation software: Potree (3D), CesiumJS (3D), Leaflet (2D)

Electronic skills: program Arduino microcontrollers and Raspberry Pi computers for various urban sensing projects (e.g. solar potential measurement, urban timelapse capture, microclimate sensing, portable LiDAR and sonar)