

Curriculum Vitae

Personal information

Name	Devanjan Bhattacharya
Current Job	Teaching Fellow, The Bayes Centre, University of Edinburgh.
Research Profile	https://www.research.ed.ac.uk/en/persons/devanjan-bhattacharya https://www.ed.ac.uk/profile/devanjan-bhattacharya

Employment history

Date (month/year) From To		Name of Organisation and position/ role held.	Type of appointment
05/2023	Ongoing	The Bayes Centre UoE, Teaching Fellow in Earth Observation & SDGs with Data Analytics.	Full time (Gr 8) Contractual
05/2020	04/2023	Marie Skłodowska-Curie Actions TRAIN@ED Postdoctoral Fellow in PeaceTech, Law School, University Of Edinburgh.	Full time (Gr 7) 3-year fellowship
08/2019	02/2020	CMR Institute of Technology Bangalore India, Associate Professor of Computer Science and Engineering	Full time
03/2019	07/2019	Bhartiya Skill Development University Jaipur India, Associate Professor of Computing	Full time
07/2015	10/2018	Manager, GEO-C, H2020 project, NOVA IMS (Information Management School), Universidade Nova de Lisboa, Lisbon, Portugal.	Full time (European Commission contract)
05/2014	06/2015	Assistant Professor of Geomatics Engineering, Bulent Ecevit University, Turkey	Full time (Contractual)
07/2013	12/2013	Researcher – Erasmus Mundus, Politecnico di Torino, Italy	Visiting, Full time
12/2012	04/2014	Senior Researcher, GeoInformatics, University of Pardubice, Czech Republic	Full time (EU Contract)
02/2012	12/2012	GIS Specialist Grade II, CISTUP, Indian Institute of Science, Bangalore	Full time (Contractual)
10/2009	09/2010	Visiting Researcher, Politecnico di Torino, Italy	Visiting PhD student Full time
09/2007	10/2008	Senior Software Engineer, Sasken Technologies Ltd., Bangalore, India	Full time
01/2005	06/2005	Lecturer, Computer Engineering, Mewar Institute of Technology, Ghaziabad, Uttar Pradesh, India	Part-time

Training and qualification history

Date (month/year) From To		Qualification	Subject	Awarding body	Mark or level achieved
12/2022	12/2023	UK FHEA PGCERT	Education, teaching, curriculum	University of Edinburgh	Yet to complete
11/2008	12/2011	PhD	Geomatics engineering	Indian Institute of Technology (IIT) Roorkee	Awarded
07/2005	07/2007	Master of Technology	Geomatics engineering	IIT Roorkee	8.32 / 10
07/2000	07/2004	Bachelor of Information Technology	Information Technology	University of Delhi	60.66 / 100

Grant history

Awarded: 6

Not successful: 7

Under preparation: 2 (ESRC/EPSRC/NERC New Investigator, Standard grants, presented in UOE GeoSciences Pitch to Peers session).

Funded

Date (month/year) From-To	Title of grant/ Awarding body	Project title	Length of grant, Place taken	Role/ position in the grant	Total amount awarded
01/2021-09/2021	ESRC IAA / UKRI, UoE	Safe routing micro-mobility in cities in times of pandemics.	12 months, UoE	PI	£ 11500
07/2015 - 10/2018	ITN H2020/ European Union Under GEO-C	Geo Enabling Sensor web and IoT by Semantic Enhancements	40 months, NOVA IMS, Lisbon	Individual Postdoctoral Research	€ 80000
07/2013 - 12/2013	ERASMUS MUNDUS / EU EXPERTS II PostDoc grant	Open WebGIS based Interlinking of Open Geo-Databases OSM, Natural Earth, GeoNames for Place Ranking	6 months, Politecnico di Torino, Italy	PI	€ 11000
12/2012 – 05/2014	FP7 Expertise Building / European Union/Czech govt	Spatial data infrastructure for global datasets based on semantic matching of catalogues.	3 years University of Pardubice, Czech Republic	Senior Researcher (left midway for faculty position in Turkey)	€ 36000
10/2009 – 09/2010	Young Indian Researcher Grant/ Italian Ministry of Education & Research	Development of a Popular Usage Based Hazard Warning System for Landslides in Italian Conditions.	12 months Politecnico di Torino, Italy	Individual Fellowship PhD researcher grant	€ 18000
Awarded 2019 (funded but declined, chose UoE project PeaceTech, TRAIN@ED)	ELITE-S H2020 MSCA COFUND, ranked highest in the round.	Enhancement of Data Standardisation for Smarter Cities using Geo spatial Infrastructure and Artificial Intelligence (GEOSPACE)	2 years Dublin City Univ, Maynooth Univ, Ireland	Individual research project (moved to UoE on another MSCA proposal)	€ 60000 x 2 years

Submitted but not funded

Project Title	Funding source	Amount	Period (Status)	Role of the PI (submitted as PI)	Place to be taken
Establishing and Quantifying Conflict Induced Climate Change Stressors on Environment, Sustainability and Resilience of Human Societies Using Geospatial Data Analytics.	UKRI FLF 2022-23	£ 1.2M	2022-2028 (proposal not funded)	PhD supervision, research, development, management.	University of Edinburgh, School of Geosciences.
Studying the impact of conflicts on environment and establishing their carbon footprints.	Google Climate Innovation Impact Challenge 2022	\$ 5M	2023-25 (not selected in final 5)	Research, entrepreneurship, team-building, scaling, capacity building.	University of Edinburgh, Google UK
Augmented smart cities integrating sensor web and spatial data infrastructures (SENSDI)	Portugal Ministry of Science & Tech (FCT)	€ 240,000	2018-2021 (proposal not funded)	PhD supervision, research, development, management.	NOVA IMS, Lisbon, Portugal
Location intelligence using spatial data infrastructures, sensor web and knowledge based expert systems (LISENS)	Portugal Ministry of Science & Tech (FCT)	€ 500,000	2019-2024 (proposal not funded)	PhD supervision, research, development, management.	NOVA Laboratory for Computer Science and Informatics
Climate Modeler Expert System Integrating SDI and Sensor Web (CLIMSYS)	Alexander von Humboldt, Germany. For Junior Group Leader.	€ 1,600,000	2018-2023 (not funded)	PhD supervision, research, development, management.	GERICS, HZG, Hamburg, Germany
Location Intelligence of Things Integrating Sensor Web with Spatial Data Infrastructure: Open Geo-Enabled ES for IoT(LISENS)	European Research Council (ERC) Starting Grant 2018	€1,500,000	2018-2023 (not funded)	PhD supervision, research, development, management.	NOVA IMS, Lisbon, Portugal

Geospatial Enablement of Climate Modeling Expert System Using SDI and Sensor Web (CLIMSYS)	Helmholtz Young Investigator Group (YIG) leader, GERICS, HZG, Germany	€1,600,000	2019-2024 (not funded)	PhD supervision, research, development, management.	GERICS, HZG, Hamburg, Germany
Automated Landslide Early Warning System for Turkey - TURKALEWS	AFAD, TUBITAK, Turkey	100,000 TL	2014-2017	Research, development.	Submitted, afterwards left Turkey and the position.
Spatial Intelligence Integrating SDI and Sensor Web For Sustainable Smart Cities and Enterprises	CareerFit Enterprise Ireland MSCA - 180077	€ 60000 x 3 years	2019-2022	research, development, business and academic partnership.	Submitted, in absence of business partner, not selected.

Career breaks

Dates (month/year)		Reason
From	To	
03/2020	04/2020	Waiting to join UoE from India.
11/2018	02/2019	Back in India from EU after long time, looking to settle.
01/2012	02/2012	After PhD defence looking for a job.
07/2007	09/2007	Batch recruitment and joining delay.
07/2004	01/2005	After undergrad, preparing for graduate entrance exam.
07/1999	06/2000	Preparing for undergrad entrance exam.

Prizes and awards

Date(month/year)	Prizes/Awards/Accomplishments
04/2023	Royal Society of Edinburgh Mary Somerville Research Team Medal to our team PeaceRep for working on Peace Tech.
08/2021 - 2024	Global talent endorsement by UKRI sponsored by UoE.
08/2022 – 08/2023	UKRI NERC Constructing a Digital Environment (CDE) Senior Expert.
09/2019	Future Leadership in ICT Standards in Europe “ELITE-S” in Dublin (ADAPT Centre SFI, DCU & Maynooth) Ireland, €200,000 project (top ranked) on geo-spatial architecture for Industry 4.0, not taken, declined, chose Univ of Edinburgh http://elite-fellowship.eu/ .
10/2012	Indian National Academy for Engineering INAE Best PhD Thesis Award.
07/2013	2013 ERASMUS MUNDUS EXPERTS II PostDoc grant (EU, by Goettingen Univ Germany) for 6 months.
02/2013	Gandhian Young Technological Innovation Award-2013 by National Innovation Foundation & SRISTI, @ IIM-Ahmedabad.
05/2009	FIG (International Federation of Surveyors) Foundation 2009 Grant winning paper at Eilat Israel.
2005-07; 2008-2011	Indian Ministry Scholarship for Master's and PhD.
2014 - onwards	Memberships in FCT NOVAIMS Portugal, Marie Curie Network, British Academy ECR.

Membership of Professional Bodies

- o [British Academy Early-Career Researcher Network](#) Member (Unique ECRN ID number: 0351150).
- o UKRI Early Career Researcher Network Member.
- o UOE Early Career Researcher Network Member.
- o [SCRIPT Centre](#) Member, managed by Law School, interdisciplinary across UOE.
- o UKRI FLF Talent Peer Review College (PRC) Member.
- o UKRI [NERC CDE Advisor](#), managed by [Cranfield University](#).
- o Member of [NOVA IMS Scientific Research Council](#) MAGIC @ [MAGIC Researchers Profiles](#).
- o Member of Fundação para a Ciência e a Tecnologia (FCT), Ministry for Education and Science Portugal, membership id J651862.
- o Marie Curie Alumni Association (MCAA) membership ID 145311.
- o Member of INSTICC (Regular member # 14967), the Institute for Systems and Technologies of Information, Control and Communication, [INSTICC WebPage](#)
- o Turkish Governmental Coordination Committee Member for Science and Technology Development 2014-15 [Link](#).
- o Member of Hazard Applications & Research Center, Bulent Ecevit University, Turkey 2014-15 [HomePage](#)
- o Member of EURAXESS Links India.
- o Associate Member of EuroScience.
- o Member of [EUROPA SINAPSE](#).
- o European Commission Research & Innovation Participant Portal Expert Profile: EX2014D198035.

Teaching

@ **Univerzita Pardubice**: Lectures on GIS for ERASMUS MUNDUS Exchange students. Practical laboratory on GIS using ArcGIS.

@ **Bulent Ecevit University**: Fall Semester: i) GIS, ii) Advanced GIS, iii) Numerical Analysis, iv) Technical English v) LIS - Land Information System. Spring Semester: i) Spatio Temporal GIS, ii) Advanced DBMS, iii) DBMS, iv) Urban Information Systems, v) WebGIS.

@ **Univ Nova Lisboa**: Classes on GIS at Nova Information Mgmt School.

@ **Indian Universities**: Associate Prof positions teaching AI, ML, DBMS, Business Management etc. Computer Science & Engg subjects Operating System, Computer System Architecture, C Programming.

Mentoring/Supervision/Guidance

@ **IIT Roorkee and IISc Bangalore Civil Engg**: guiding on geo-deformation analysis / seismic induced landslide KB creation. Guiding on PLASMA setup environment, working and architecture understanding; Studies on comparative analysis of different Agent Based Modelling & Simulation tools to see which is best suited for applications in transportation, logistics, game playing etc.; Guiding on VISUM-VISSIM for 3D/4D traffic simulations.

@ **NOVA IMS, Lisbon**: Mentored 16 PhD early stage researchers, 6 of them directly in Lisbon, 10 others time to time online, stationed in Spain and Germany, for 3 years under the ITN H2020 project GEO-C.

@ **University of Edinburgh**: Guided interns from IAD Research Directorate, and from Law School PeaceTech projects, funding some from my annual research budget under TRAIN@ED.

List of Outputs

I have 43 publications ([UoE Research Database](#)) in international journals, conferences, inter-governmental reports, chapters, letter and reviews. Another 23 publications are listed in [Google Scholar](#) as archived and internal reports. Some are highlighted next. I hold 2 Indian Design Patents for products.

Select Publications

Under 2nd review:

2023: Comparison of automatic classification methods for identification of ice surfaces from UAV-borne RGB imagery, J Jech, J Komárková, **D Bhattacharya**, under section Earth Sci & Geography, New Trends of GIS Technology in Environmental Studies, in *Applied Sciences* journal.

Under Preparation:

2023: Nature Scientific Data, S Mishra, **D Bhattacharya**, A Chaturvedi and N Singh, "*Tale of 2 cities: a data-based web application for micro-mobility analysis during Covid times in Bhubaneswar and Delhi*"

2023: Nature Review Earth & Environment, **D Bhattacharya**, C Bell, "*Mapping carbon footprints of conflicts: the current state-of-the-art and the way forward*"

2023: Nature Humanities & Soc Sci Communications, S Badanjak, **D Bhattacharya**, Fiona Knäussel, Christine Bell and Laura Wise "Designing an interactive real-time web-mapped dashboard to visualise conflict ceasefires data over COVID19 infection rates: Facilities and Way Ahead"

Published:

2022: Assessing micro-mobility services in pandemics for studying 10-minutes cities concept in India using geospatial data analysis (Systems Paper), 15th IWCTS **ACM SIGSPATIAL** 2022, Seattle,

<https://doi.org/10.1145/3557991.3567788>

2022: Sumit Mishra, Vishal Singh, Ankit Gupta, **Devanjan Bhattacharya** & Abhisek Mudgal Adaptive traffic signal control for developing countries using fused parameters derived from crowd-source data, Transportation Letters, DOI: <https://doi.org/10.1080/19427867.2022.2050493>

2021: **D. Bhattacharya** et al., "Designing an interactive real-time web-mapped dashboard to visualise conflict ceasefires data over COVID-19 infection rates: facilities and the way ahead," 2021 **IEEE Global Humanitarian Technology Conference (GHTC)**, 2021, pp. 200-207, doi: 10.1109/GHTC53159.2021.9612457. <https://ieeexplore.ieee.org/abstract/document/9612457> ;

2021: Application-Based COVID-19 Micro-Mobility Solution for Safe and Smart Navigation in Pandemics, S Mishra, N Singh, **D Bhattacharya**, ISPRS International Journal of Geo-Information, 2021, 10 (8), 571, <https://www.mdpi.com/2220-9964/10/8/571/htm>

2020: J.Allison, S.Badanjak, B.Bach, C.Bell, **D.Bhattacharya**, F.Knaussel, L.Wise, An interactive tracker for ceasefires in the time of COVID-19, **The Lancet Infectious Diseases**, ISSN: 1473-3099, 20, in print, 2020. Also on ScienceDirect: <https://www.sciencedirect.com/science/article/pii/S1473309920309324>

2020: Trilles S, Granell C, Degbelo A, **Bhattacharya D** (2020) Interactive guidelines: Public communication of data-based research in cities. **PLoS ONE** 15(1): e0228008.

<https://doi.org/10.1371/journal.pone.0228008>

2019: Degbelo A., Granell C., Trilles S., **Bhattacharya D.**, Wissing J. (2020) Tell Me How My Open Data Is Re-used: Increasing Transparency Through the Open City Toolkit. In: Hawken S., Han H., Pettit C. (eds) Open Cities | Open Data. Palgrave Macmillan, Singapore

- 2018:** S. Mishra, **D. Bhattacharya**, A. Gupta, "Congestion Adaptive Traffic Light Control and Notification Architecture Using Google Maps APIs", *Data* 2018, 3(4), 67; <https://doi.org/10.3390/data3040067> (registering DOI), <http://www.mdpi.com/2306-5729/3/4/67>
- 2018:** S. Mishra, V. Singh and **D. Bhattacharya**, "Framework for Freight Truck Return-Trip Assignment System," *IEEE Eleventh International Conference on Contemporary Computing (IC3)*, Noida, India, 2018, pp. 1-3, DOI: 10.1109/IC3.2018.8530500.
- 2016:** Degbelo, A., Granell, C., Trilles, S., **Bhattacharya, D.**, Casteleyn, S. Kray, C. (2016): Opening up Smart Cities: Citizen-Centric Challenges and Opportunities from GIScience. *ISPRS Int. J. Geo-Inf.* 5, 16, Special Issue "Geo-Information Fostering Innovative Solutions for Smart Cities", ISSN 2220-9964 (**Online Open Publication**).
- 2016:** Degbelo, A., **Bhattacharya, D.**, Trilles, S., Canut, C. G., Kray, C., Schiestel, N. (2016): Designing Semantic Application Programming Interfaces for Open Government Data, *JeDEM - eJournal of eDemocracy and Open Government*. Web Link ; Paper Full ISSN: 2075-9517.
- 2014:** **Bhattacharya, D.**, Ghosh J. K., Komarkova, J., Banerjee, S., Kutoglu H. S. (2014): Distributed GIS for Automated Natural Hazard Zonation Mapping Internet-SMS Warning towards Sustainable Society, *Cogent Engineering*, Taylor & Francis Online, <http://www.tandfonline.com/doi/pdf/10.1080/23311916.2014.961346>
- 2013:** Ghosh J. K., **Bhattacharya, D.**, Boccardo, P., Samadhiya, N.K. (2013): Automated Geo-Spatial Hazard Warning System GEOWARNS: Italian Case Study, *American Soc. of Civ. Engg. J. Computing in Civ. Engg.* published online 2013, [http://ascelibrary.org/doi/abs/10.1061/\(ASCE\)CP.1943-5487.0000372](http://ascelibrary.org/doi/abs/10.1061/(ASCE)CP.1943-5487.0000372) (in print 2015).
- 2013:** **Bhattacharya, D.**, Ghosh, J. K., Boccardo P., Komarkova, J. (2013): Automated Geo-Spatial System for Generalized Assessment of Socio-Economic Vulnerability due to Landslide in a Region. *European Journal of Remote Sensing (EuJRS)*. 46, 379 – 399, <http://www.tandfonline.com/doi/abs/10.5721/EuJRS20134622>
- 2012:** **Bhattacharya, D.**, Ghosh, J.K., Samadhiya, N.K. (2012): Review of Geohazard Warning Systems toward Development of a Popular Usage Geohazard Warning Communication System. *ASCE Nat. Hazards Rev.* 13(4), 260–271, [http://ascelibrary.org/doi/abs/10.1061/\(ASCE\)NH.1527-6996.0000078](http://ascelibrary.org/doi/abs/10.1061/(ASCE)NH.1527-6996.0000078)
- 2012:** Ghosh, J.K., **Bhattacharya, D.**, Boccardo, P., Samadhiya, N. K. (2012): A generalized geo-hazard warning system. *Natural Hazards*. Springer Netherlands, 64, 2, 1273-1289, <http://link.springer.com/article/10.1007%2Fs11069-012-0296-0>.
- 2011:** **Bhattacharya, D.**, Ghosh, J.K., Boccardo, P., Samadhiya, N.K. (Oct. 2011): Wireless Hazard Communication System. *Journal of Systems and Information Technology*. Emerald Publishing (United Kingdom), Vol. 13, No. 4, 408-424, <http://dx.doi.org/10.1108/13287261111183997>
- 2010:** Ghosh, J.K., **Bhattacharya, D.** (2010): A Knowledge Based Landslide Susceptibility Zonation System. *Amercn Soc. of Civ. Eng. Jrnl. of Computing in Civ. Engg.* 24(4), 325-334, available online at : [www.link.aip.org/link/doi/10.1061/\(ASCE\)CP.1943-5487.0000034](http://www.link.aip.org/link/doi/10.1061/(ASCE)CP.1943-5487.0000034)
- 2008:** **Bhattacharya, D.**, Ghosh, J.K. (2008): Evaluation of Knowledge Representation Schemes as a Prerequisite toward Development of a Knowledge-Based System. *American Soc. of Civ. Engg. J. Computing in Civ. Engg.* 22(6), 348 – 359, 11/2008, DOI: [https://doi.org/10.1061/\(ASCE\)0887-3801\(2008\)22:6\(348\)](https://doi.org/10.1061/(ASCE)0887-3801(2008)22:6(348))

Project Management Reports and Deliverables to EU

- [GEO-C Project deliverable](#) "Report on Open City Toolkit", Auriol Degbelo, Sergi Trilles, Devanjan Bhattacharya.
- [GEO-C Project deliverable](#) "[Report on Mid-Term Progress of GEO-C](#)", Auriol Degbelo, Sergi Trilles, Devanjan Bhattacharya.
- GEO-C [Project deliverable](#) "[Report on Data Management Plan](#)", Auriol Degbelo, Carlos Granell, Sergi Trilles, Devanjan Bhattacharya.

Creation Of Technology Transfer Platform, and Data Management Plan (DMP)

European Commission makes it mandatory for its funded projects to provide open technology maintenance and distribution through platforms such as Zenodo and OpenAire. Both of these platforms are open repositories for EU funded projects and technologies. The project I worked on has maintained GEO-C community on Zenodo: <https://zenodo.org/communities/geoc/> and <http://geo-c.eu/results> has the clear link to OpenAire.

Design Patents

- Indian Patent Office granted 1 design patent for ROBODOG,
- 1 design under consideration - ProjectTable. Details: https://sites.google.com/site/bhattacharyadevanjan/patents_1