

Anna Petrášová

Personal Information

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| name | Anna Petrášová |
| homepage | https://petrasovaa.github.io |
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Education

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| 2013–2018 | Geospatial Analytics PhD program, Center for Geospatial Analytics, transferred in 2017 from Marine, Earth and Atmospheric Sciences PhD program, North Carolina State University, advisor Dr. Helena Mitasova, GPA 4.0 Dissertation thesis Tangible Geospatial Modeling defended March 12, 2018 |
| 2011–2013 | Faculty of Civil Engineering, CTU in Prague, Czech Republic Master degree study program Geoinformatics Master's thesis: Visualization of Spatio-Temporal Data in GRASS GIS http://geo.fsv.cvut.cz/proj/dp/2013 |
| 2007–2011 | Faculty of Civil Engineering, CTU in Prague, Czech Republic Bachelor degree study program Geoinformatics Bachelor's thesis: Graphical User Interface for Composing Hardcopy Map Outputs in GRASS GIS: http://geo.fsv.cvut.cz/proj/bp/2011 |

Employment

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| 2018 | Postdoctoral researcher at the Center for Geospatial Analytics, North Carolina State University |
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Teaching and Research Experience

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| 2014–2018 | Teaching Assistant of Geospatial Modeling and Analysis master's-level course: developing and teaching courses on geospatial modeling and UAS data processing |
| 2013–2018 | Graduate Research Assistant at the Center for Geospatial Analytics, North Carolina State University |
| summer 2012 | Erasmus Practical Placement, Fondazione Edmund Mach di San Michele all'Adige (Italy), supervisor Markus Neteler — Detection of farm buildings from orthophotos |

Other Professional Experience

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| 2014 | Google Summer of Code—Implementation of GRASS GIS module for 3D raster flow line computation http://trac.osgeo.org/grass/wiki/GSoC/2014/ImplementationOf3DRasterFlowLine |
| 2011 | Google Summer of Code—Completion of wxGUI Nviz extension for 3D data visualization in GRASS GIS: http://grass.osgeo.org/wiki/WxNviz_GSoC_2011 |

Technical skills

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| programming skills | Python ecosystem, C/C++, C++/Qt, wxPython, R, Bash, SQL Also experience with: HTML, Java, Octave/Matlab, XML Version control systems (Git, SVN) and wiki technologies |
| GIS and related | GRASS GIS, QGIS, GDAL/OGR, ArcGIS, PostGIS, PCL, OpenDroneMap, Agisoft Photoscan, OpenStreetMap, Blender |
| sensors | Lidar, UAS, Kinect data processing and analysis |
| teaching | developing teaching materials and leading workshops |

Professional Interests

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| open everything | open source, open science, open data |
| open source GIS | GRASS GIS community and development |
| geovisualization | spatio-temporal data visualization tangible geospatial modeling |
| other interests | Ubuntu OS, L ^A T _E X typesetting |

Community involvement

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| mentoring | Google Summer of Code 2016, 2017, 2018 mentor under OSGeo (GRASS GIS project) Providing support on GRASS GIS mailing lists and GIS Stack Exchange Co-organizing GRASS GIS meetups in NC Triangle area |
| outreach | Participatory modeling with Tangible Landscape in Oregon to collaboratively explore the spread of Sudden Oak Death disease and design possible interventions. Collaborative modeling with Tangible Landscape at Bald Head Island Conservancy to allow the visitors, students, and researchers to explore the island's dynamic landscape and potential impacts of storms surge through a serious game. |

Memberships

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| since August 2016 | GRASS GIS Project Steering Committee |
| since August 2014 | OSGeo Charter Member |
| since 2013 | NCSU GeoForAll Lab (geospatial.ncsu.edu/osgeore1) |
| 2012–2013 | OSGeo Research and Education Laboratory at FCE CTU in Prague |
| since 2011 | GRASS GIS Development Team |

Awards

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| July 2018 | 1st place in NC State Research Image Contest |
| October 2017 | State of the Map US 2017 travel scholarship |
| August 2017 | OSGeo Travel Grant for FOSS4G 2017 conference |
| May 2017 | NSF Travel Award to attend CyberGIS Summer School and UCGIS Symposium |
| February 2017 | NSF Travel Grant for International Cartographic Conference July 2017 |
| October 2016 | NSF Student Travel Grant for ACM SIGSPATIAL 2016 |
| February 2014 | NCSU Geospatial Analytics travel scholarship to present GIS-based environmental modeling with tangible interaction and dynamic visualization at iEMSs 2014 conference |
| May 2012 | 1 st place in Czech-Slovak student competition (SVOČ) for project Quantum GIS Plugin for Czech Cadastral Data (co-author Vaclav Petras) |

Publications

- 2018 Millar, G., Tabrizian, P., **Petrasova, A.**, Petras, V., Harmon, B., Mitasova, H., Meentemeyer, R. Tangible Landscape: A Hands-on Method for Teaching Terrain Analysis. ACM CHI 2018, Montréal, Canada.
- 2018 Harmon, B., **Petrasova, A.**, Petras, V., Mitasova, H., Meentemeyer, R. Tangible topographic modeling for landscape architects. *International Journal of Architectural Computing*. DOI: 10.1177/147807711774995
- 2017 Tabrizian, P., Harmon, B., **Petrasova, A.**, Petras, V., Mitasova, H., Meentemeyer, R. Tangible Immersion for Ecological Design. Association for Computer Aided Design in Architecture (ACADIA), at Cambridge, MA.
- 2017 **Petrasova, A.**, Mitasova, H., Petras, V., Jeziorska, J. Fusion of high-resolution DEMs for water flow modeling. *Open Geospatial Data, Software and Standards*.
- 2017 Tonini, F., Shoemaker, D., **Petrasova, A.**, Harmon, B., Petras, V., Cobb, R. C., Mitasova, H., Meentemeyer, R. K. Tangible geospatial modeling for collaborative solutions to invasive species management. *Environmental Modelling & Software*.
- 2016 Tabrizian, P., **Petrasova, A.**, Harmon, B., Petras, V., Mitasova, H., Meentemeyer, R. Immersive Tangible Geospatial Modeling (Demo Paper). Proceedings of the 24th SIGSPATIAL International Conference on Advances in Geographic Information Systems.
- 2016 Pickard, B. R., Van Berkel, D., **Petrasova, A.**, Meentemeyer, R. K. Forecasts of urbanization scenarios reveal trade-offs between landscape change and ecosystem services. *Landscape Ecology*, 1-18.
- 2016 **Petrasova, A.**, Petras, V., Van Berkel, D., Harmon, B., Mitasova, H., and Meentemeyer, R., 2016. Open Source Approach to Urban Growth Simulation. *ISPRS-International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences Volume XLI-B7*, 953-959.
- 2016 Jeziorska, J., Mitasova, H., **Petrasova, A.**, Petras, V., Divakaran, D., Zajkowski, T. Overland Flow Analysis Using Time Series of Suas-Derived Elevation Models. *ISPRS Annals of Photogrammetry, Remote Sensing and Spatial Information Sciences*, 159-166.
- 2016 Harmon, B. A., **Petrasova, A.**, Petras, V., Mitasova, H., Meentemeyer, R. K. Tangible Landscape: Cognitively Grasping the Flow of Water. *ISPRS-International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, 647-653.
- 2016 Harmon, B., **Petrasova, A.**, Petras, V., and Mitasova, H. 2016. Computational Landscape Architecture: Procedural, Tangible, and Open Landscapes. In J. R. Anderson & D. Ortega (Eds.), *Innovations in Landscape Architecture*. Routledge, 43-56.
- 2015 **Petrasova, A.**, Harmon, B., Petras, V., Mitasova, H. 2015. Tangible Modeling with Open Source GIS. Springer International Publishing. 135 p.
- 2015 Petras, V., Mitasova, H., **Petrasova, A.** Mapping gradient fields of landform migration. In: Jaroslaw, J., Zwolinski, Z., Mitasova, H., Hengl, T. *Geomorphometry for Geosciences*. Bogucki Wydawnictwo Naukowe, Adam Mickiewicz University in Poznan – Institute of Geocology and Geoinformation. Poznan, Poland.
- 2015 Petras, V., **Petrasova, A.**, Harmon, B., Meentemeyer, R., Mitasova, H. Integrating Free and Open Source Solutions into Geospatial Science Education. *ISPRS International Journal of Geo-Information*, 4(2), p. 942-956.
- 2014 **Petrasova, A.**, Harmon, B., Mitasova, H., White, J. Tangible Exploration of Subsurface Data. Poster presented at Fall Meeting, AGU, San Francisco, Calif., 14-18 Dec.
- 2014 **Petrasova, A.**, Harmon, B., Petras, V., Mitasova, H., 2014. GIS-based environmental modeling with tangible interaction and dynamic visualization. In: Ames, D.P., Quinn, N.W.T., Rizzoli, A.E. (Eds.), *Proceedings of the 7th International Congress on Environmental Modelling and Software*, June 15-19, San Diego, California, USA.

Workshops and presentations

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| workshops | <p>SotM-US 2017 — Tangible Landscape</p> <p>FOSS4G 2017 — From GRASS GIS novice to power user</p> <p>ICC 2017 — Analytical data visualizations with GRASS GIS and Blender</p> <p>FOSS4G NA 2016 — Using GRASS GIS through Python and tangible interfaces.</p> <p>US-IALE 2016 Annual Meeting — Spatio-temporal Modeling with Open Source GIS: Application to Urban Growth Simulation using FUTURES</p> <p>FOSS4G Europe 2015 — How to write a Python GRASS GIS 7 addon.</p> <p>FOSS4G 2014 — Spatio-temporal data handling and visualization in GRASS GIS.</p> |
| webinars | <p>Tangible Landscape: open source environment for geospatial learning, science, and community. August 2016, GeoForAll, UCGIS, and ASPRS webinar.</p> <p>Tangible Landscape as a tool for modeling and science communication. November 2016. Conservation Biology Institute Webinar</p> |
| presentations | <p>research presented at iEMSs 2014, FOSS4G 2014, FOSS4G Europe 2015, ISPRS 2016, ACM SIGSPATIAL 2016, NCGIS 2017, UCGIS Symposium 2017, ICC 2017, World Bank 2017, FOSS4G 2017, SotM-US 2017</p> |

Developed open source software

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| Tangible Landscape | <p>Lead developer of open source tangible geospatial interface powered by GRASS GIS</p> <p>http://tangible-landscape.github.io</p> |
| GRASS GIS | <p>Part of core development team, focused on tools for visualization and 3D raster analysis, open source urban growth model FUTURES for projecting urbanization</p> |