Anna Petrášová
Résumé

Personal Information

name	Anna Petrášová
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Education

2013 – present	PhD program at Marine, Earth and Atmospheric Sciences, Center for Geospatial Analytics, North Carolina State University, advisor Dr. Helena Mitasova, GPA 4.0 Dissertation on the design and application of tangible user interface for geospatial modeling and analyses
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

Teaching and Research

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

Professional Experience

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

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
sensors	Lidar, UAS, Kinect data processing and analysis
teaching	developing teaching materials and leading workshops

Professional Interests

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, LaTeX typesetting

Community involvement

mentoring	Google Summer of Code 2016 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	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

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

Awards

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	Czech and Slovak student competition 1st place in mathematical Competition of prof. Vyčichlo for project Rectangle Detection in Images Using Hough Transform and Application of This Method to Detect Farm Buildings in North Italy Orthophotos
May 2012	1st place in Czech-Slovak student competition (SVOČ) for project Quantum GIS Plugin for Czech Cadastral Data (co-author Vaclav Petras)

Publications

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., Meetenmeyer, 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 Geoecology 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. 2014. Tangible Exploration of Subsurface Data. Poster presented at Fall Meeting, AGU, San Francisco, Calif., 14-18 Dec 2014.

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.

2012 **Kratochvilova, A.**, Petras, V., Quantum GIS plugin for Czech cadastral data, Geoinformatics FCE CTU, Volume 8, 2012.

Workshops and presentations

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

Developed open source software

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