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Gregor Passolt

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Experience

Statistical Programmer, Partners for Our Children (Nov 2012-present): Worked on multiple aspects in preparation for the launch of the Child Well-Being Data Portal. Performed demographic interpolation of US Census data to improve rate measurements. Introduced formal bug-tracking to streamline workflow. Designed "jitter" function to mask sensitive data without explicit censoring. Designed new measurements and visualizations. Performed exploratory data analysis to inform complex statistical modeling. Wrote and produced video tutorials. Created templates for automatically generated reports. Led quantitative analysis of effects of court involvement on children in foster care using competing risks survival models. Analyzed the effects of placement and school transitions on children in foster care.

Master's Thesis (2009-2012)**:** Dual project modeling juvenile salmon survival during outmigration through the Columbia River hydropower system and generating random forest landscapes with specifiable spatial characteristics for harvest scheduling models. Salmon model was fit to massive amounts of longitudinal tagging data in a maximum likelihood framework with fixed and random effects. The forest landscape production creates spatially explicit random maps—for the purpose of testing optimization models used for managerial decision-making—using nonparametric regression techniques so that the resulting landscape matches pre-specified criteria. Demonstrated experience working with:

- Large and complex multivariate data
- Parametric and nonparametric methods
- Communicating methods and results to a broad audience
- Spatial statistics
- Longitudinal (panel) data
- Creating software deliverables
- Survival (time-to-event) analysis

Associate, Cascadia Consulting (2009): Analyzed carbon emission, energy use and waste disposal datasets and built modeling framework for projections based on various scenarios. These models were used by several cities to inform decisions about what recycling service levels to offer.

Math & Physics Teacher, Tanzania Ministry of Education / Peace Corps (2006-2008). Taught A-level (college prep) math and physics, filling two full-time teaching positions. Instruction in English and Swahili with up to 80 students in a class.

- In my school's first year to graduate an A-Level class, my students outperformed *all* of the (well-established) schools in neighboring districts in both math and physics.
- Authored & published a 190-page math textbook tailored to the needs of Tanzanian students; no other book exists specifically for this syllabus. Raised funds to subsidize micro-publication. The book is currently being used at several schools and is available free online.
- As Physics Department Head, managed lab schedules and encouraged teachers to utilize the laboratory facilities. Lab use more than quadrupled under my supervision.
- Wrote a grant to fund and manage a project renovating teacher housing at a local primary school. Working with the village government, we identified teacher housing as a critical issue for attracting and retaining teachers.
- Fluent in Swahili. My skill level was independently assessed as "Advanced High" (2008).

Economic Modelling of Renewable Energy, National Renewable Energy Laboratory (2005-2006). Technical leader for team. Researched, analyzed and developed predictive model for renewable energy technology diffusion, including parameters for fiscal policy and specific market dynamics. Mathematics/Engineering Clinic project, Harvey Mudd College.

Event Coordinator, Lambert House, Seattle (Summer, 2004). Planned, publicized, and managed a talent show for GLBTQ youth. Coordinated weekly meetings, met deadlines, and engaged at-risk youth in constructive activities.

Education

University of Washington: M.S. Quantitative Ecology & Resource Management, 2012.

Harvey Mudd College: B.S. Mathematics, with honors, 2006.

Graduate coursework: Statistics (including inference; maximum likelihood and Bayesian model fitting including MCMC and simulation), applied math, resource management, optimization, demography, epidemiology.

Awards and Honors: Trainee and Fellow, Center for Studies in Demography and Ecology (2012), Strauss Grant for Social Understanding (2004), Harvey S. Mudd Merit Award (2002-2006), Schlumberger Scholarship (2002-2006).

Publications: Passolt, Gregor, Miranda J. Fix, and Sándor F. Tóth. "A Voronoi tessellation based approach to generate hypothetical forest landscapes." *Canadian Journal of Forest Research* 43.999 (2013): 78-89.

Programming: Expert in R (see R packages in bulleted list below), especially graphics, modeling and data manipulation. Familiar with object-oriented programming with experience in Python and Java. Experience interfacing with databases (MySQL and SQL Server), and with other statistical software packages (Stata, SPSS). Some web development experience (HTML, JavaScript, working in Unix-like environments).

- vitality: An implementation of the vitality family of mortality models (CRAN, 2013).
- rlandscape: Generates random landscapes with specifiable spatial characteristics (CRAN, 2012).

Software: Microsoft Office (esp. Word, Excel & PowerPoint), GIS, graphic design using Adobe InDesign and LaTeX.