Vania Wang named UCSB’s First GloCal Health Fellow

IGERT Trainee Vania Wang (Geography) will be the first UCSB student accepted to the University of California Global Health Institute (UCGHI) GloCal Health Fellowship program. The fellowship provides support for Vania to spend 12-months in Africa, where she will investigate aspects of human navigation in resource-poor communities. On the premise that, "in the absence of planned pathways, merged movement trajectories from volunteered geographic information can be leveraged to create maps that show frequently traveled paths and locations of unmapped spaces," Wang will track people living with HIV in undeveloped countries and build maps that can inform the placement of treatment and self-testing centers. Much of the GloCal application overlaps with Vania's doctoral proposal. Ultimately, she hopes her research will help health providers identify specific geographic barriers to health provision in a given unplanned settlement.

As described on the University of California Global Health Institute (UCGHI) website,

The GloCal Health Fellowship provides aspiring global health researchers with outstanding interdisciplinary education and training in innovative research designed to improve health for populations around the world. A career development fellowship sponsored by the National Institutes of Health (NIH) Fogarty International Center (FIC), this program supports awarded fellows from all 10 UC campuses as well as 20 affiliated international sites across 17 countries. UCGHI manages and supports the GloCal Health Fellowship. (https://ucghi.universityofcalifornia.edu/fellowships/glocal-health-fellowship)

We wish to extend heartfelt congratulations to Vania and her advisor, Professor Susan Cassels, on this outstanding achievement and amazing opportunity! Vania leaves for Malawi in July.

Seminar Focus: Causal Inference

Finally! Causality finds its way to our weekly seminars.

This quarter, Ambuj Singh will lead a seminar on causal inference. Seminar participants will learn about the different types of causality, including Type, Actual, and Granger Causality. The course will focus primarily on readings from Judea Pearl, and on Cosma Shalizi’s work on causal inference. Students will be encouraged to read and present other publications on the subject matter as well. The seminar will occur on Mondays at 1 pm in the Network Science Lab. Students can sign up for credit through the Computer Science Department.
In our case, we compute the posterior of the latent state. In order to generate prediction samples from a state space model, one first computes the posterior of each given time series analytically, as this joint distribution over the prediction range for each time series is computed using the observations and the true observations of the training range. Once the network parameters are learned, we can use them to address our original problem specification. Monte Carlo samples, which allow us to implement the overall log-likelihood computation using a neural network form. The images here capture and compare daily transportation routes of infrastructure, that transcend physical boundaries. How do we conceptualize community boundaries in this way? How can networks help?

Per Burtner, Geography and organizational communication offer an opportunity to reconcile this paradox, as both communication and travel activity can be represented in network forms. The images here capture and compare daily transportation routes of individuals in the greater Los Angeles area, according to race and ethnicity. By mapping such networks, Burtner explores the differences in how sub-group networks are formed and maintained within the geographic boundaries of their larger communities. She uses networks as representations of urban mobility, and a medium for analyzing the creation of "places." This project is expected to become a significant part of Burtner’s dissertation.

Computer Science trainee Alon Albalak would like to be able to parameterize a state space model by using a Long Short Term Memory Recurrent Neural Network (LSTM). Advised by new Computer Science faculty member Yu-Xiang Wang, Albalak is currently attempting to recreate the work of Rangapuram in his paper “Deep State Space Models for Time Series Forecasting” as a starting point. Alblaak would eventually like to use the deep state space model as a method of dialog state tracking, such as in the paper by Wen et. al., “Latent Intention Dialog Models," presented at ICML 2017.

This project is still in the exploratory stages and is expected to continue into Spring Quarter. By then, Alon and Dr. Wang hope to extend their research to some simple problems in control theory and reinforcement learning — problems such as balancing a pole on top of a cart.

(Image credits: Wikipedia editor Megajuice and S. Rangapuram)