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# Joseph Navelski

GitHub: JNavelski
LinkedIn: JNavelski

## Education

**PhD in Economics**, *Washington State University* — August 2018 - May 2023 (Expected)
**MS in Statistics**, *Washington State University* — August 2018 - May 2022 (Expected)
**MS in Agricultural and Resource Economics**, *University of Arizona* — August 2016 - May 2018
**BA in Sociology w/ Minor in Business**, *University of New Hampshire* — August 2007 - May 2011

## Skills

| | |
|---|---|
| **Tools and Languages** | Python, R, Git, LaTeX, MarkDown, RSTAN, SQL, STATA and Tableau |
| **Research Areas** | Economic and Mathematical Modeling, Econometrics, Machine Learning, Optimization, Game Theory, Social Network Theory, Applied Statistical Methods, Data Science, NLP and Industrial Organization |
| **Communication** | English and Spanish (professional) |

## Research Projects

**Monitoring Reliability under Competing Risks Using Field Data** — **Journal of Quality Technology (In Review)**
*w/ Jave Pascual*

**Abstract:** Many modern products fail due to one of multiple causes called competing risks. In this article, we propose variable features for monitoring product failure by control charts under competing risks. Failure reports arrive one at a time from a finite population of units. Features are derived from both the reports and the assumed competing-risk statistical model. To assess the efficacy of different feature subsets in detecting shifts in the failure-time process, we consider control charts based on random forests and compare the average run length performances under different shift scenarios. We demonstrate the control charts with both simulated data sets and actual field data set from a consulting problem. We also propose graphical fault-diagnosis methods for identifying assignable causes of alarm signals. Control charts based on the proposed features will provide valuable information to manufacturers in planning for warranty, part-replacement, or repair.

**Analyzing Consumer Acceptance and Social Interactions Using Social Media Data:**
Methods and An Application to the Topic of Genome Editing in Domestic Livestock — *Working Paper*

**Abstract:** Given a particular topic of interest, I estimate the sentiment, ideology and social influence in a representative population of social media users using the text, social network structure and demographic information for each user. I use different machine learning techniques to estimate sentiment, a latent variable spatial following MCMC model to uncover ideology, and an information driven social learning model to derive social influence. I present the theoretical foundation for each estimation process, and then apply each method to a representative Twitter sample of users that have an interest in genome editing in domestic livestock. The derived estimates are then used in a theoretical Industrial Organization (IO) economic model to show how sentiment, ideology and social influence change equilibrium predictions. Results show that the quantity consumed and price of genome edited products decreases as social influence (advocacy) increases, while the quantity consumed and price of non-genome edited products has an opposing effect. Policy makers should adopt these methods to better understand how sentiment, ideology and social influence impact economic equilibrium from an empirical standpoint.

**Multiple Signals in a Corporate Socially Responsible Equilibrium**
*Working Paper w/ Felix Munoz-Garcia*

**Abstract:** We develop a Perfect Bayesian Nash Equilibrium (PBE) to help a firm optimally decide when to invest in a clean technology, that is seen to be socially responsible, based on a theoretical multiple signaling structure. The signaling structure represents an exogenous media source, and signals are observed with some probability conditional on firm choice.

**Penalizing Bias in Media Polarization Estimation:**
An Empirical Analysis Between Fox News and CNN — *Working Paper w/ M. Mahoney and K. Ondongo*

**Abstract:** Over the last twenty years, the political views of many Americans have diverged into two distinct camps. That political polarization has reached new heights is unquestionable, yet it is unclear to what extent mass media has contributed to this ideological schism. In this paper we adopt the approach of Gentzkow, Shapiro and Taddy (2019) to quantify polarization across America's two most prominent news outlets, FOX News and CNN. The constructed polarization index demonstrates that media polarization has indeed risen over time, with the largest yearly increase in 2016. We then apply our index to assess the causal impact of media polarization on political polarization.

## Professional Experience

**Graduate Research Assistant** — **January 2021 — Present**
*Washington State University, School of Economic Sciences* — *Pullman, WA*
USDA NIFA Grant w/ Dr. Jill McCluskey - "Social Interaction and Consumer Acceptance of Genome Editing in Domestic Livestock"

**Graduate Lead Instructor** — **August 2019 — Present**
*Washington State University, School of Economic Sciences* — *Pullman, WA*
EconS 101 - Fundamentals of Microeconomics (Spring 2022)
EconS 101 - Fundamentals of Microeconomics (Fall 2020)
EconS 305 - Intermediate Microeconomics (Summer 2020)
EconS 424 - Strategy and Game Theory (Spring 2020)
EconS 327 - International Trade and Finance Economics (Online - Fall 2019)

**Graduate Teaching Assistant** — **August 2016 — May 2019**
*Washington State University, School of Economic Sciences* — *Pullman, WA*
EconS 102 - Fundamentals of Macroeconomics
*University of Arizona, Department of Agricultural and Resource Economics* — *Tucson, AZ*
AREC 360 - Poverty and Development of Nations
AREC 315 - Agribusiness Economics and Management
AREC 304 - Intermediate Production and Consumption Economics

**Graduate Outreach Assistant – University of Arizona Peace Corps Coverdell Fellow** — **August 2016 — May 2018**
*University of Arizona, Graduate College* — *Tucson, AZ*

**GS-7 Research Economist – Student Intern** — **Summer 2018 & 2017**
*U.S. Department of Agriculture, Economic Research Services (ERS)* — *Washington, DC*

**GS-7 Passport Specialist** — **April 2016 — March 2017**
*U.S. Department of State, Consular Affairs* — *Tucson, AZ & Portsmouth, NH*

**Project Manager, Engineering Technician, and Lead Scuba Diver** — **November 2014 — April 2016**
*Blue Water Concepts LLC.* — *Eliot, ME*

**Composter / Advisor** — **November 2015 — April 2016**
*Mr. Fox Composting* — *Portsmouth, NH*

**Mechanic** — **September 2014 — Nov. 2014**
*Port City Mopeds LLC.* — *Portsmouth, NH*

**U.S. Peace Corps Sustainable Agriculture and Food Security Specialist** — **May 2012 — August 2014**
*U.S. Peace Corps Nicaragua* — *Laguna de las Perlas, Nicaragua*

## Extracurricular Activities

**Member / Presenter** — **January 2020 — Present**
*Python Working Group, Washington State University* — *Pullman, WA*
**Presentations delivered:**
Working with APIs
Social and Economic Analysis

**Board Member** — **Fall 2021 — Present**
*Graduate Student Brown Bag Series, Washington State University* — *Pullman, WA*

**Active Mentor** — **August 2021 — Present**
*Association for Women in Mathematics, Washington State University* — *Pullman, WA*

**Active Member** — **January 2021 — Present**
*Tri-Alpha National Honor Society for First-Generation College Students, Washington State University Chapter* — *Pullman, WA*

**Graduate Student Representative** — **August 2017 — May 2018**
*U.A. College of Agriculture and Life Sciences (CALS) curriculum Review Committee* — *Tucson, AZ*

**Vice President** — **January 2017 — May 2018**
*U.A. Peace Corps Association Fellows Club* — *Tucson, AZ*

## Awards & Certifications

**Awards**
Excellence in Teaching Award — WSU School of Economic Sciences, 2021
Meritorious Graduate Teaching Assistant — UofA Department of Agriculture and Resource Economics, 2018
Jack Vaughn Award for Outstanding Leadership - Nomination — UofA Peace Corps Coverdell Fellows, 2018

**Certifications**
Spanish Advanced-Low Certification — American Council of Teaching Foreign Languages, Current
Secret Security Clearance — U.S. Department of State, 2016 — 2021