

CS 787 --- Decision Guidance Systems --- Fall 2018

Professor Alex Brodsky (<http://cs.gmu.edu/~brodsky/>)

Description:

Decision Support Systems (DSS) are widely used to support organizational and personal decision-making in diverse areas such as engineering systems, finance, business, economics and public policy. They are becoming increasingly critical with the information overload from the Internet. While the scope of DSS is broad, Decision Guidance Systems (DGS) is a class of DSS geared to elicit knowledge from domain experts and provide actionable recommendations to human decision-makers, with the goal of arriving at the best possible course of action. To this end, DGS may need to:

- use and mine large amounts of data
- elicit knowledge about model structure from domain experts
- learn deterministic or stochastic models
- elicit metrics, KPI and decision objectives
- perform analysis tasks, incl. monitoring, diagnosis, prediction, optimization
- explain actionable recommendations to decision-makers
- solicit decision makers' feedback for iterative improvement

What to expect:

- studying methodologies, languages and tools for building Decision Guidance Systems.
- Hands-on experience of building a real Decision Guidance System in an area of your choice, which you can put on your CV
- Personal project/research guidance with the professor
- **Most importantly: A lot of fun!**

Intended Audience:

- PhD students: [CS](#), [IT](#), [SEOR](#) (ideal for applying to your research, or exploring ideas for research in the area of your interest)
- MSc students: [CS](#), [IS](#), [SWE](#), [ISE](#), [OR](#), [DAE – data analytics engineering](#) (ideal for students who would like to acquire highly useful skills and hands-on experience in building Decision Guidance Systems.

Questions: brodsky@gmu.edu

More on decision guidance systems: listen to Prof. Brodsky's keynote address at ICEIS 2019:

<https://vimeo.com/277994631>