



Virginia Tech Problem Day #2

Draft Agenda

10/24/2018



Detailed Schedule



	Time	Topic
Act I: <i>Kick-Off</i>	8:00 – 8:05 AM	<ul style="list-style-type: none"> Welcome & Introductions
	8:05 – 8:15 AM	<ul style="list-style-type: none"> Problem Day Overview, Objectives & Recap of Problem Day #1
Act II: <i>Case Studies</i>	8:15 – 9:00 AM	<ul style="list-style-type: none"> Case Study #1 – Regulation Reaction <ul style="list-style-type: none"> Problem Overview and Detail – Deloitte Provide overview of approach and discuss related research – Virginia Tech Discussion of Deloitte approach and partnership/synergy opportunities - All
	9:00 – 9:45 AM	<ul style="list-style-type: none"> Case Study #2 – Infrastructure Spending <ul style="list-style-type: none"> Problem Overview and Detail – Deloitte Provide overview of approach and discuss related research – Virginia Tech Discussion of Deloitte approach and partnership/synergy opportunities - All
	Break	
	10:00 – 10:30 AM	<ul style="list-style-type: none"> Case Study #3 – Package Tracking <ul style="list-style-type: none"> Problem Overview and Detail – Deloitte Provide overview of approach and discuss related research – Virginia Tech Discussion of Deloitte approach and partnership/synergy opportunities - All
	10:30 – 11:15 AM	<ul style="list-style-type: none"> Virginia Tech Analytics Research Overview <ul style="list-style-type: none"> Discussion on how VT approaches research partnership opportunities Discussion on VT provided research topics
Act III: <i>Virginia Tech Research</i>	11:15-11:45 AM	<ul style="list-style-type: none"> Deloitte Data Analytics Fellowship Presentation from Fellows
	11:45 – 12:00 PM	<ul style="list-style-type: none"> Wrap-Up <ul style="list-style-type: none"> Summation of Day Discuss next steps and collaboration opportunities

Deloitte Problem Day on October 24, **8am to 1pm in the New Classroom Building Room 170.** Deloitte has proposed three problems and are eager to hear your advice on how to tackle these issues. The goal of Problem Day is to strengthen our partnership, showcase your work, and have some fun as well.

15 faculty participants

Name, Title	College	Email	Participant
Bert Huang , Assistant Professor of Computer Science / Discovery Analytics Center	College of Engineering	bhuang@vt.edu	Case Study 1
Nicole Abaid Asst Prof Dept of Biomedical Engineering and Mechanics	College of Engineering	nabaid@vt.edu	Case Study 2
Weijun Xie Asst Prof Industrial and Systems Engineering	College of Engineering	wxie@vt.edu	Case Study 3, Research Overview
Sally Morton Dean & Professor of Statistics	College of Science	scmorton@vt.edu	general
Ron Fricker Dept Head Dept of Statistics	College of Science	rf@vt.edu	general
Gretchen Matthews Professor Department of Mathematics	College of Science	gmatthews@vt.edu	Case Study 3
Ali Habibnia Big Data Economics Dept of Economics	College of Science	habibnia@vt.edu	Research Overview
Mark Embree Prof of Mathematics/ Leader CMDA division/ Discover Analytics Center	College of Science	embree@vt.edu	Research Overview
Feng Guo Associate Professor Dept of Statistics	College of Science	fguo@vti.vt.edu	Case Study 2 , Research Overview
Sudipta Sarangi Dept Head Economics	College of Science	ssarangi@vt.edu	Research Overview
Brian Mayer Research Associate Discovery Analytics Center	Institute for Critical Technology and Applied Science	bmayer@vt.edu	Research Overview
Robin Russell Dept Head Business Information Technology	Pamplin College of Business	rrussell@vt.edu	general

Reza Barkhi KPMG Professor and Director of Ph.D. Program Department of Accounting and Information Systems	Pamplin College of Business	reza@vt.edu	Case Study 3
Onur Seref Assistant Professor, Business Information Technology	Pamplin College of Business	seref@vt.edu	Case Study 1,2,3 Research Overview
Michelle Şeref Associate Collegiate Professor Business Information Technology	Pamplin College of Business	mmhseref@vt.edu	Case Study 1,2,3 Research Overview

Faculty unable to attend

[Naren Ramakrishnan](#)

[Chris North](#)

[Tanu Mitra](#)

Respective work areas noted below

Naren Ramakrishnan

1. Semi-Automated Identification, Classification, and Coding
The AutoGSR system conducts automated coding of events from news articles published in multiple languages. The nuts and bolts of the AutoGSR system constitute an ecosystem of filtering, ranking, and recommendation models to determine if an article reports an event of interest and, if so, proceed to identify and encode specific characteristics of the event such as the when, where, who, and why.
<http://people.cs.vt.edu/naren/papers/adp1156-sarafA.pdf>

Tanu Mitra

1. SENPAI - Supporting Exploratory Text Analysis through Semantic & Syntactic Pattern Inspection - The paper is currently under review. Here are notes from the abstract
What are the relevant patterns for a task, and how to find them? NLP practitioners choose patterns informed by theory, and find them through computational models. However, few tools allow identifying rich patterns without NLP expertise. We introduce SENPAI , a novel tool that discovers combined semantic and syntactic patterns in textual data. SENPAI fuses neural embeddings, dependency parsing, and graph mining to surface patterns directly from data. We apply SENPAI to measure credibility, politeness, and sentiment in text. Quantitatively, models powered by SENPAI perform similarly to theoretically-motivated ones. Qualitatively, SENPAI discovers patterns that are interpretable and meaningful. SENPAI enables building computational models without NLP expertise and discovering new linguistic constructs.
2. CREDBANK - more details in [paper](#).
CREDBANK is based on the real-time tracking of more than 1 billion streaming tweets over a period of more than three months, computational summarizations of those tweets, and intelligent routings of the tweet streams to human annotators—within a few hours of those events unfolding on Twitter.
3. Large-scale data analysis of online communities with the goal of studying misinformation & online conspiracies. Methods used include NLP and statistical modeling. The abstract has

additional details. [Paper 1](#), [Paper 2](#). I can rework the writeup once we know what we should aim for.

Chris North

1. Interactive AI

Augmenting human sensemaking processes with machine learning capabilities. How can AI support a person who is conducting an analysis of big data in a way that addresses human-centered usability? How can AI augment and be embedded within the human sensemaking process? How can analysts and AI collaboratively sensemake? How can analysts interact with AI to direct and steer it? How can AI learn from the analyst’s sensemaking activities and respond accordingly? How can AI results be presented to the analyst within context in their sensemaking process? How can AI enable analysts to focus on the high-level analysis concepts, while supporting them with the low-level details and evidence?

Our work on "Space to Think" and "Semantic Interaction" seeks to address these issues in big text analysis scenarios. As analysts begin to organize and synthesize information to form hypotheses, embedded machine learning methods observe analysts’ sensemaking interactions with the data and help to forage for relevant information and organize it into the analyst’s synthesis space.

More text and picture and videos are here: <http://infovis.cs.vt.edu/content/semantic-interaction-project>

12 observers

Karin Clark Assoc Director Business Development	LINK Center for Advancing Industry Partnerships	karinclark@vt.edu	Observer
Hannah Green Admin Associate	LINK Center for Advancing Industry Partnerships		Helping with set up and break down, attending lunch
Amy Weishaar Assistant Director of Special Events Pamplin College of Business Virginia Tech 400 Turner Street (0122) Blacksburg, VA 24061 T: 540-231-2107	Pamplin College of Business	aweis07@vt.edu	
Wade Stokes Assistant Dean of Advancement	College of Science	lwstokes@vt.edu	Observer, Breakfast and Lunch
Steven Mackay, Director of Communications	College of Science	stephkap@vt.edu	Observer, Covering communications
Stephanie Kapilani	College of Engineering	stephkap@vt.edu	
Fred Faltin	College of Science		Observer for COS

Associate Professor of Practice Department of Statistics			
Jonathan Baker Deloitte Foundation Data Analytics Fellow Math	College of Science		Lunch
Leanna Ireland Deloitte Foundation Data Analytics Fellow Sociology	College of Liberal Arts and Human Sciences		Lunch
Kaveh Kelarestaghi Deloitte Foundation Data Analytics Fellow Civil Engineering	College of Engineering		Lunch
Long Xia Deloitte Foundation Data Analytics Fellow Business Information Technology	Pamplin College of Business		Lunch
Sirui Yao Deloitte Foundation Data Analytics Fellow Computer Science	College of Engineering		Lunch
Elizabeth Mitchell Assistant Dean of Advancement	Pamplin College of Business	elizhm@vt.edu	Lunch
Jeremy Weaver Assistant Dean of Advancement	College of Engineering	jww18@vt.edu	Lunch

Deloitte Facilitators
10 from Deloitte

Name	Level	Alignment	Attendance	Email Address
Rob Torpey	Senior Manager	Leadership	In-Person	RTorpey@Deloitte.com
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