VII. STANDING COMMITTEES

A. Academic and Student Affairs Committee

"Big Data, Societal Impact"

INFORMATION ONLY

Ankur Teredesai, Associate Professor, UW Tacoma Institute of Technology will provide a presentation titled, "Big Data, Societal Impact."

Dr. Teredesai studies systems, tools and techniques to improve our understanding of various domains that are set to generate large amounts of data including the web, social media, healthcare, education, and sensor networks. He uses data mining techniques as his tools to develop solutions for data management in these domains.

Broadly, his research interests span data mining, social networks, and pervasive computing.

He actively collaborates with colleagues from academia and industry. His work includes trust enhanced social recommendation systems, handwritten zip-code recognition, novelty detection in video data streams, link analysis in online social networks, intelligent bidding agents for sponsored search advertising, and query processing in sensor networks, to name a few prior efforts.

Dr. Teredesai enjoys teaching, advising, and mentoring undergraduate and graduate students. He finds developing new approaches to enhance participation of non-traditional students to computing to be of great importance and interest. He is also engaged in developing new programs and curricula in computing and co-developed the recently launched Information Technology and Systems degree program at UW Tacoma.

big DATA -
Societal Impact
A presentation for UW Board of Regents
Web and Data Science
Prof. Ankur Teredesai, Ph.D.
Associate Professor,
Institute of Technology,
University of Washington Tacoma
Societal Impact
Societal Big Data
- Domains are data rich but
poor.
- Who will translate society's need for data aware decision making?
Why new tools?
Need to to capture, store, manage and analyze big data.
Big Data is beyond the scope of typical relational database software tools
PARIO
The Birth of Big Data
200 BC
Observation is Data
1500 AD
Data = Observation + models
2012
Data = Models + Observation + Simulation +Experiments
Mckinsey Global Institute Study: "Enterprises - 7 exabytes stored on disks in 2010"
- 1 exabyte = 4,000 X Data in Library of Congress
Projects: Web and Data Science
Special Education Data
Special Needs (Education) Project
Analyze and provide insights for educator effectiveness
5 Grad, 2 UGrad, 2 Staff
eNutrition & Diet Data
Manage, monitor and mine nutrition data
Fred Hutch + EE collaboration (NIH funded)
2 Grad, 1 UGrad
Risk of Readmission Data
Multicare Health System
- Annual projected saving 4 Million
2 Grad, 1 UGrad
International Children's adoption
Study and visualize answers to population dynamics and global health and education
1 Grad, 2 UGrad
Our Efforts
KDD Community Vision
Data Science Coursework
Data Clinics
Mission Statement
To become the Rosetta Stone for societal data science
Achievements
Local Collaborators - Worldwide Impact

big DATA - Societal Impact

A presentation for UW Board of Regents

Web and Data Science

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Societal Impact

Societal Big Data

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- Who will translate society's need for data aware decision making?

Why new tools?

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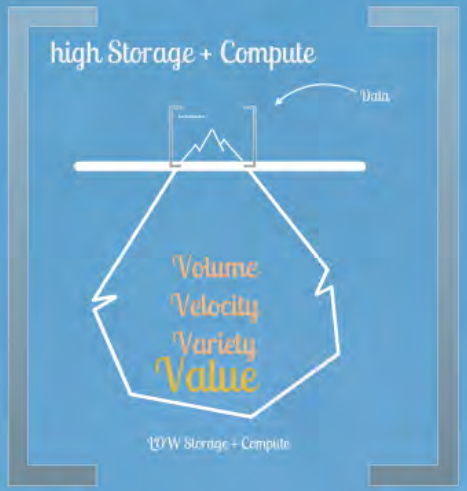
nPARIO™



Societal Big Data

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- Who will translate society's need for data aware decision making?

Why new tools?

Need to to capture, store, manage

Why new tools?

Need to to capture, store, manage and analyze big data.

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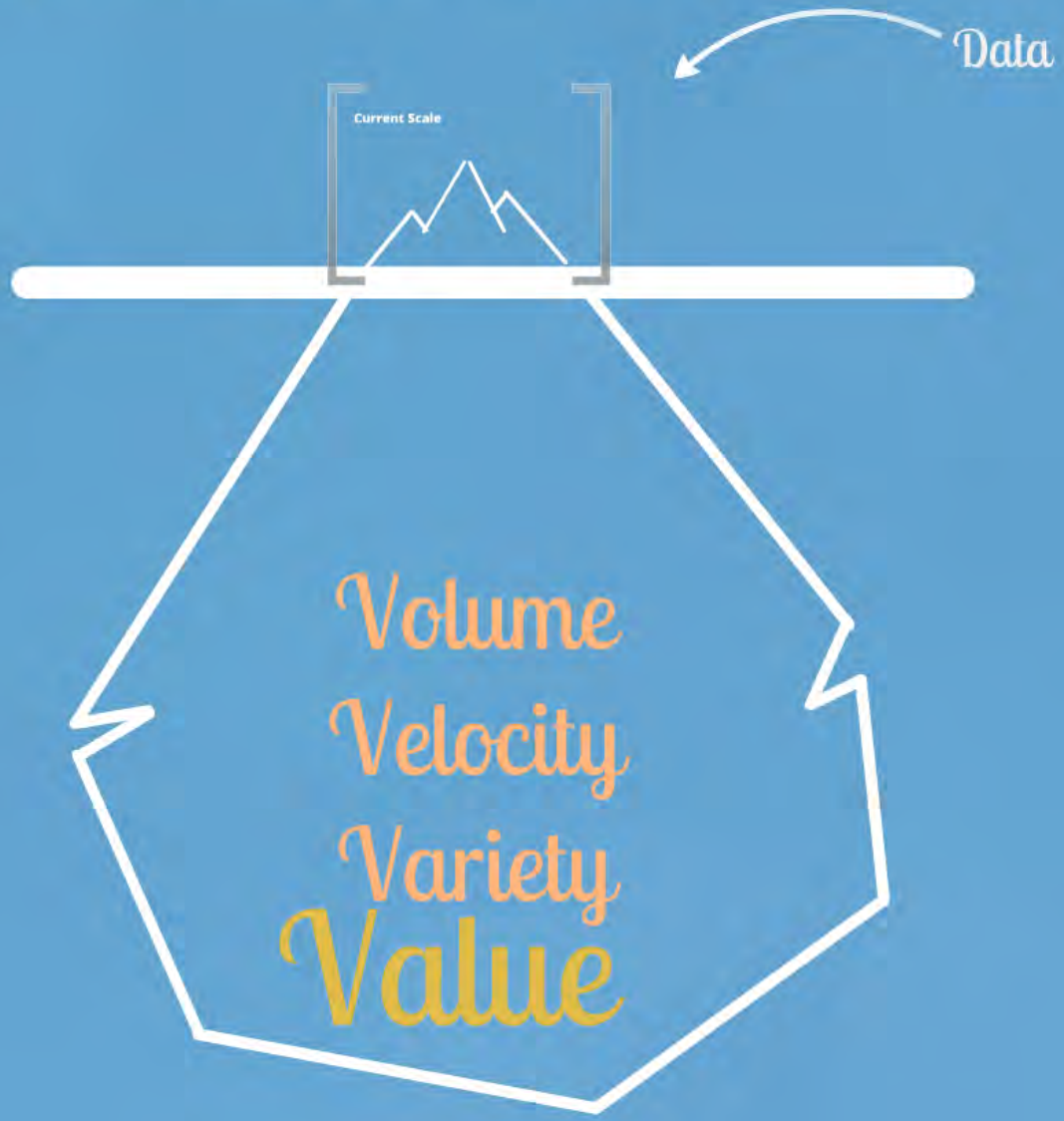
nPARIO™
high Storage + Compute

high Storage + Compute



LOW Storage + Compute

Projects: Web and

Special Education Data

Ex
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Special Needs (Education) Project
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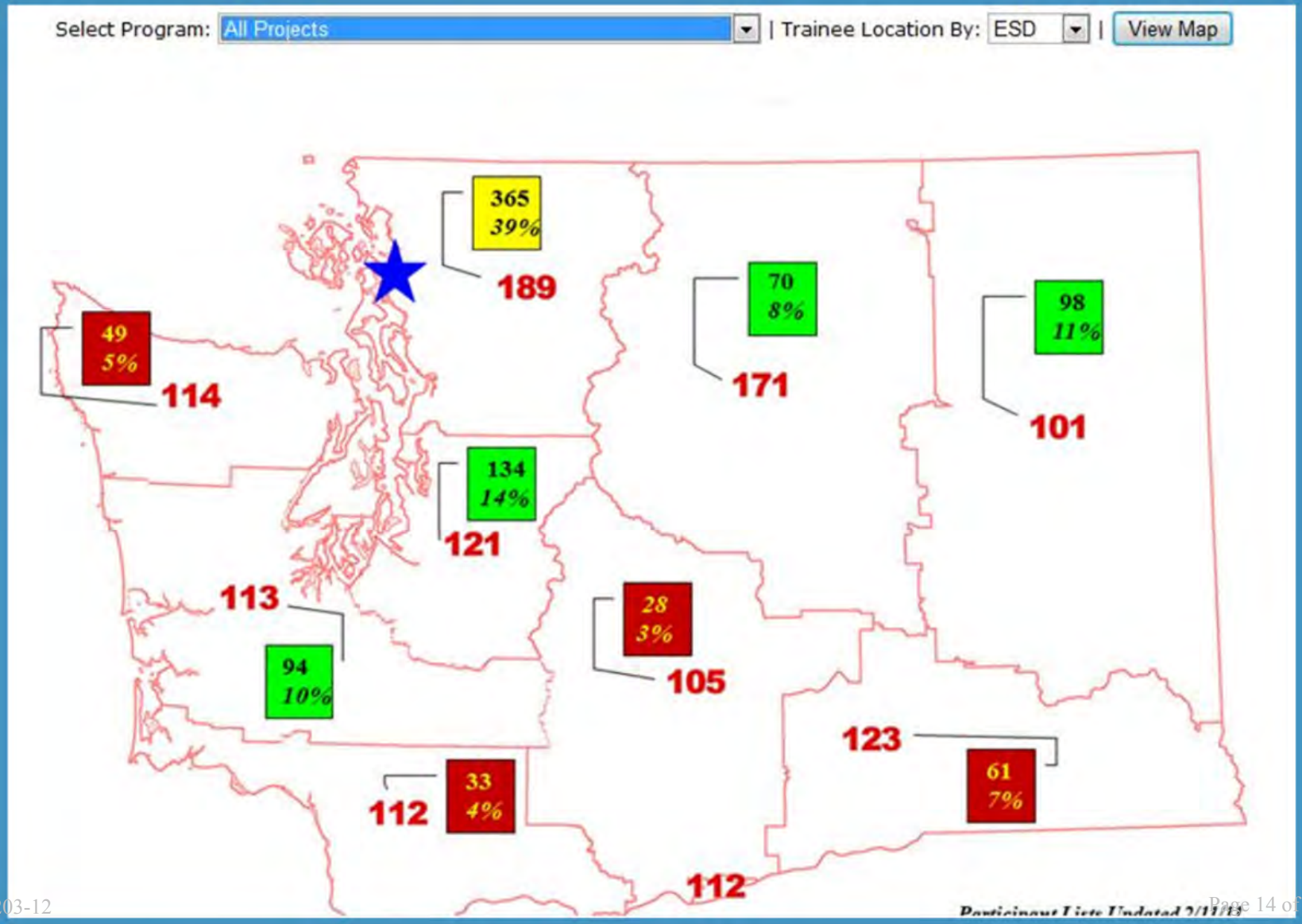
5 Grad, 2 UGrad, 2 Staff

Example of Participant Geographic Distribution Maps



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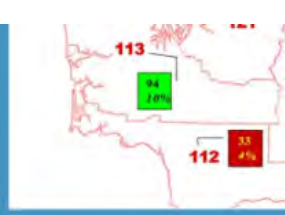

eNutrition & Diet Data

Manage, monitor and mine nutrition data
Fred Hutch + EE collaboration (NIH funded)
2 Grad, 1 UGrad

Risk of Readmission Data

Multicare Health System

Audio File

STOP

Cancel

Volume level

10
7.5
5
2.5
0

Time Stamp

7:02 PM Friday September 19th 2007

Questionaire

Milk in Coffee	Skim
Salad Dressing	Bottle / Diet
Fat on Bread	Butter
Fat at Table	Butter
Fry Fats	Corn / Olive
Trim Meat	Sometimes

Image

Brightness

10
7.5
5
2.5
0

Additional Notes

Prepared at home.

Estimate Volume

25.667

Measure Distance

Distance Measured

3.568

2 Grad, 1 UGrad

Risk of Readmission Data

Multicare Health System

- **Annual projected saving 4 Million**

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International Children's

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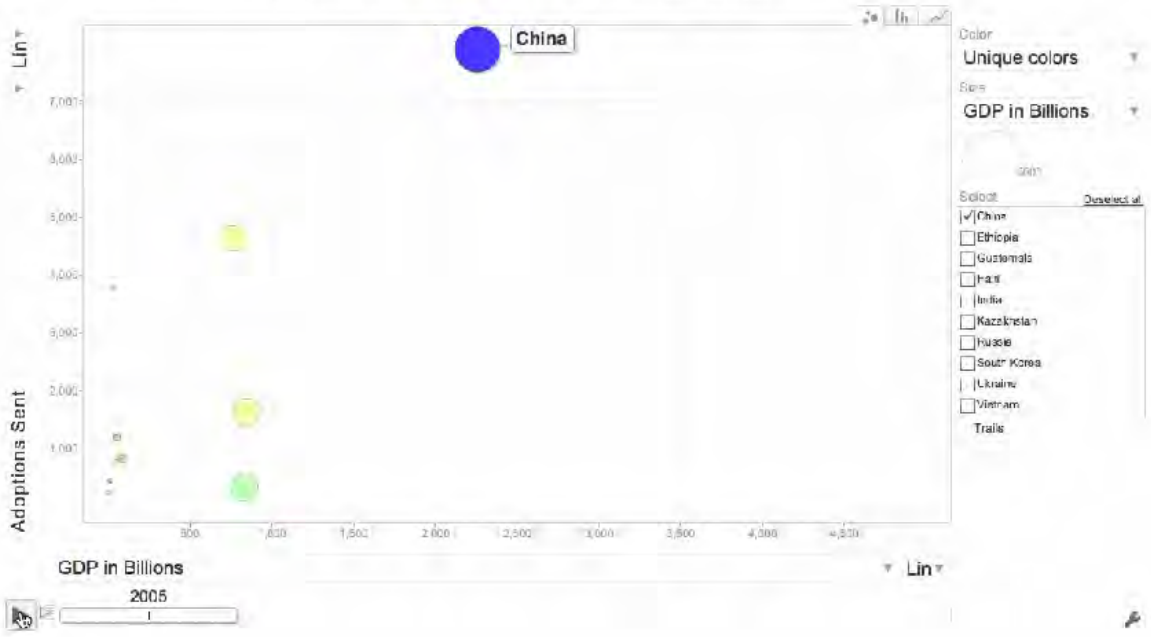
Adoptopedia

Home | Sending GDP Adoptions | Receiving GDP Adoptions | Sending GDP Per Capita | Receiving GDP Per Capita | Literacy and Adoptions | Provide Information

This motion graph shows the relation between the GDP of countries that send children for adoption and the number of children they sent to other countries for a given year . Each country is given a unique color, and the size of the bubble represents the country s GDP.



Achievements

ents

Team:
5 faculty + postdoc,
8 graduate students,
5 undergraduates

Multidisciplinary:
Education, Communication,
Nutrition Science,
Public Health

Funding:
2011 - 400K
2012 - 800K

Student Employers: Multicare, Pierce County IT, Fred Hutch, Microsoft, Amazon, nPario

Local Collaborators - Worldwide Impact

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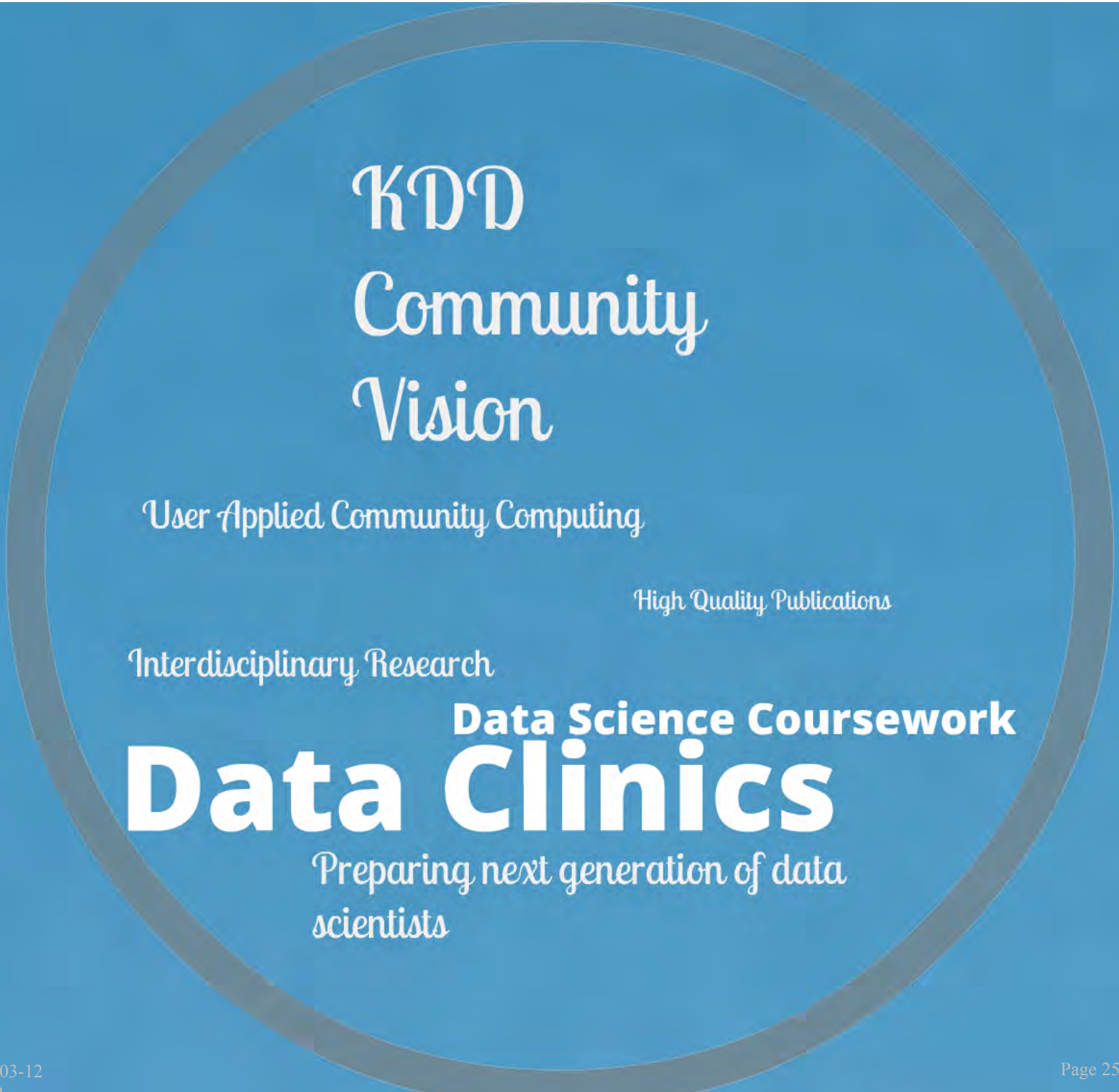
KDD
Community
Vision
User Applied Community Computing
High Quality Publications
Interdisciplinary Research
Data Science Coursework
Data Clinics
Preparing next generation of data scientists

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UNIVERSITY of WASHINGTON | TACOMA

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