How to Thrive Through Your PhD

Faryaneh Poursardar, PhD.

Computer Science Department

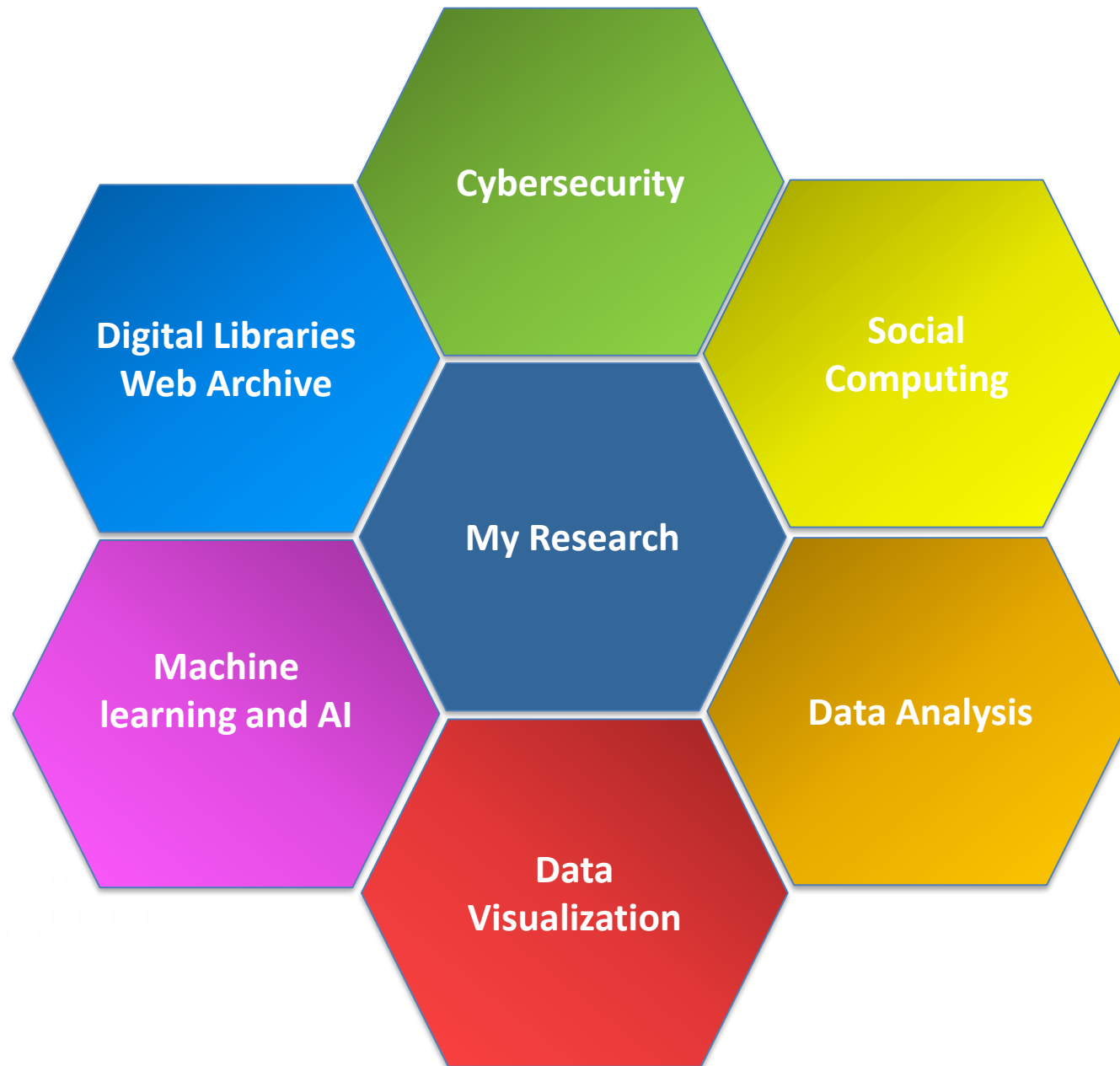Old Dominion University

March 24, 2022

About Me

- Lecturer in the Department of Computer Science and
- A member of the Web Science and Digital Libraries (WS-DL) research group

About Me

- **PhD** Computer Science and Engineering
  - Texas A&M University, TX, USA

- **MS** Computer Engineering
  - Isfahan University, Isfahan, Iran

- **BS** Computer Engineering-Software,
  - Azad University, Center Branch of Tehran, Tehran, Iran

@Faryane   @WebSciDL

Current Teaching

- CS 115: **Introduction to CS with Python**
  - **New Course** offered starting Fall 2021
- CS 625: Data Visualization (Spring 22)
- CS 432/532: Web Science (Fall 22)
- CS 330: Object Oriented Programming and Design
- CS 250: Problem Solving and Programming II
- CS 150: Problem Solving and Programming I

Current Projects

- NASA@ My Library

- Crowdsourced Review Manipulation Attacks
    - With focus on targets of attack (e.g., products, services)
    - Find hidden patterns of manipulation attacks to defeat strategic attackers

- Mis/dis-information on web

NASA@ My Library

Team Mission

Through the *NASA@ My Library* project, NASA, public libraries, and state library agencies work together to increase and enhance STEM learning opportunities for millions of library patrons throughout the nation, including geographic areas and populations that are currently underserved in STEM education.

The Space Science Institute's (SSI) National Center for Interactive Learning (NCIL), in partnership with the American Library Association, Cornerstones of Science, Lunar and Planetary Institute, and Education Development Center, leads the *NASA@ My Library* program. It leverages the STAR Library Network (STAR Net) to advance the NASA Science Mission Directorate (SMD) vision for education by engaging public audiences nationwide in informal and lifelong learning. STAR Net focuses on helping library professionals facilitate STEM learning for their patrons by providing "science-technology activities and resources" (STAR) and training to use those resources. The *NASA@ My Library* team engages key stakeholders (e.g., NASA subject matter experts (SMEs), public library partners, and state library partners) centered around high-profile NASA, Earth, celestial, and library events (e.g., 2017 solar eclipse, Earth Day, summer learning events at libraries). Key activities include stakeholder engagement, resource and experience development, professional development, a patron interest development research project, and a comprehensive project evaluation effort.

66 *"[We were] incredibly successful in reaching our underrepresented audience because we reduced access barriers like transportation and funding. We took the entire program, consumables and all, to each location. We were able to reach hundreds of kids."*
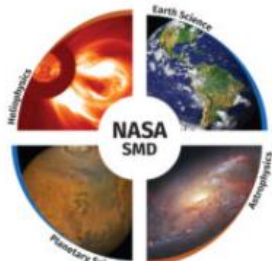Library Partner 99

66 *"Overall, NASA Subject Matter Experts have proven most valuable. We have formed a continuing partnership with one local Solar System Ambassador in particular... His efforts encapsulate what we try to achieve with NASA@ My Library."*
Library Partner 99

A National Earth and Space Science Initiative That Connects NASA, Public Libraries and Their Communities

NASA Science Mission Directorate education objectives support the Nation's education efforts to improve science literacy and to inspire the next generation of scientists and engineers. One institution that can accomplish both of these outcomes, for people of all ages and in every region of the country, is our public library system – the central focus of the *NASA@ My Library* project.

NASA@ My Library is made possible through the support of the National Aeronautics and Space Administration (NASA) Science Mission Directorate (SMD) as part of its Science Activation program.

Crowdsourced Review Manipulation Attacks

Where do you see user reviews?

User Reviews Are Everywhere

- User review impact decision making

App Marketplaces

amazon
Online Retailers

yelp
Business Review Forums

IMDb   NETFLIX
Online Media Service Providers

… and so on are targets of **manipulation**

OLD DOMINION
UNIVERSITY

Why Reviews Are Important

- User review aggregator sites play a key role in how we decide:
  - What movie to watch
  - What product to buy
  - Which restaurant to patronize
  - Which doctor to visit

  - …
- The reviews at the these aggregators are vulnerable to manipulation
- The malicious reviews can degrade the trust in the *online platforms, their products and services*

@Faryane   @WebSciDL

Crowd Review Manipulation Attacks

- Use of crowdsourcing Platform to Manipulate Reviews

- Fake review writers and fake reviews are considered as an attack.
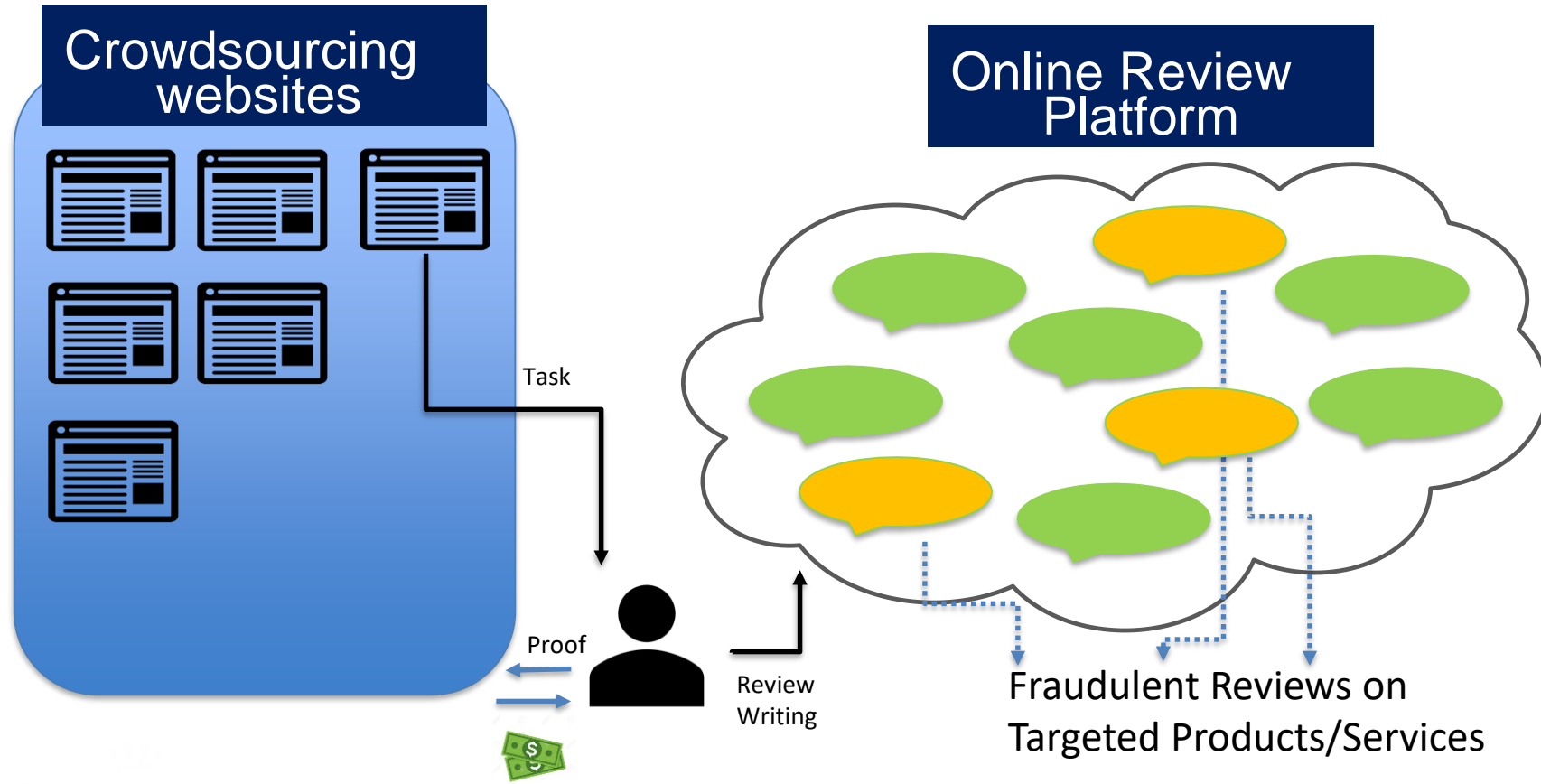- The _target of an attack_ can be a _product_ (amazon item), _place_ (restaurant) or a _service_ (doctors)

- Usual pay per task is $0.1 – $1.5

  - Crowd workers may seek to complete several tasks in a short period of time to maximize their payoff

RapidWorkers let's get it done.

1. Read the product description before writing down a review.
2. Go to https://goo.gl/7QfW0h
3. Leave a relevant 5-star review with at least 40 words.
4. Provide the proof that you left the review your self.

User behavior Patterns

@Faryane   @WebSciDL

Crowdsource Review Manipulation

Crowdsourcing websites

Online Review Platform

Task

Proof

Review Writing

Fraudulent Reviews on Targeted Products/Services

The goal is to seek the strategies on monitoring tasks on crowdsourcing sites that can uncover fraudulent reviewers

Detecting Manipulation

Proposed Approaches for uncovering manipulation:
- Manual labeling of fake reviews
  - Domain experts assess the review
  - Use of unsupervised algorithms

- Ex post analysis of outlines
  - Focus on highly visible fake behavior
  - e.g. posting dozens of reviews in short period of time

- Simulation of bad behavior
  - Volunteers think like malicious workers
  - e.g., Ott et al. 2013

Getting in the Right Frame of Mind

Stephen Covey's
7 Habits of Highly Effective People

The 7 Habits of Highly Effective People

Habit 1: Be Proactive

The 7 Habits of Highly Effective People

Habit 1: Be Proactive

- Take the initiative and make things happen.
- Aggressively seek new ideas and innovations.
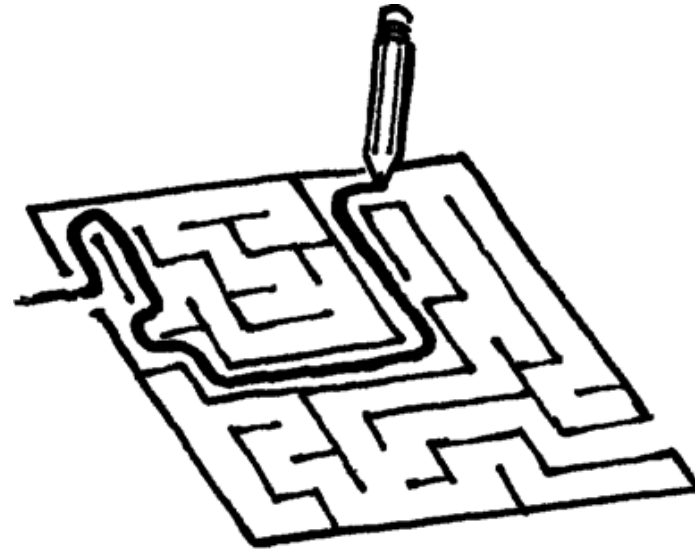
The 7 Habits of Highly Effective People

Habit 1: Be Proactive

- Don't let a negative environment affect your behavior and decisions.
- Work on things that you can do something about.
- If you make a mistake, learn from it.

@Faryane   @WebSciDL

3/10/2022

The 7 Habits of Highly Effective People

Habit 2: Begin with the End in Mind

OLD DOMINION
UNIVERSITY
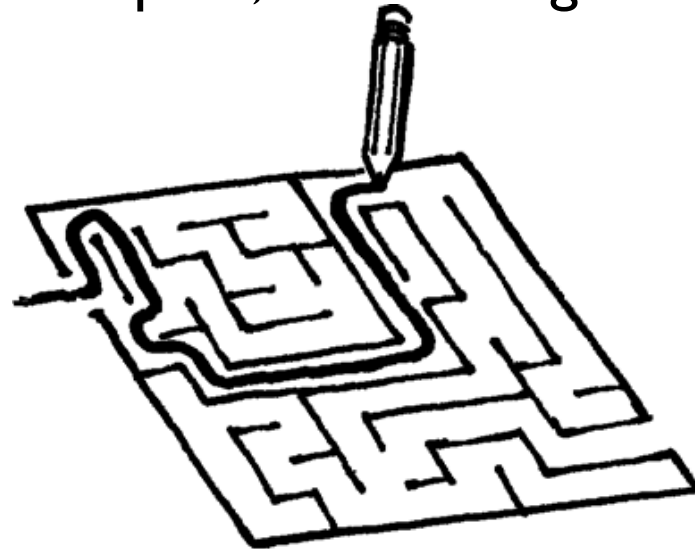
The 7 Habits of Highly Effective People

Habit 2: Begin with the End in Mind

- Know where you are going and make sure all of the steps are taken in the right direction.

- First determine the right things to accomplish, then the right way to accomplish them.

The 7 Habits of Highly Effective People
Habit 3: Put First Things First

2 3 1 4 5 6

OLD DOMINION
UNIVERSITY

The 7 Habits of Highly Effective People
Habit 3: Put First Things First

- Continually review and prioritize your goals.

- Say NO to doing unimportant tasks.

2 3 1 4 5 6

OLD DOMINION
UNIVERSITY

The 7 Habits of Highly Effective People
Habit 3: Put First Things First

- Focus on the tasks that will have impact if carefully thought out and planned.

2 3 1 4 5 6

The 7 Habits of Highly Effective People

Habit 4: Think Win/Win

- Identify the key issues and results that would constitute a fully acceptable solution.

- Make all involved in the decision feel:
  - ❖ Good about the decision.
  - ❖ Committed to the plan of action

OLD DOMINION
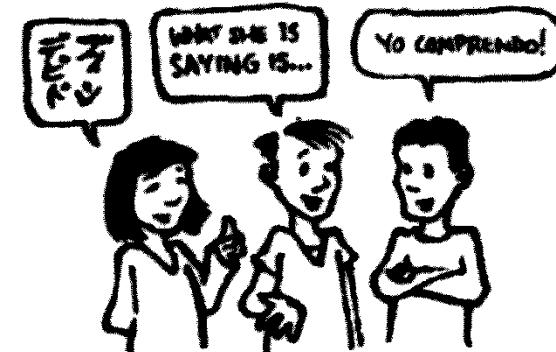UNIVERSITY

The 7 Habits of Highly Effective People
Habit 5: **Seek First** to Understand, **Then** to be Understood

3/10/2022

The 7 Habits of Highly Effective People

Habit 5: **Seek First** to Understand, **Then** to be Understood

- Learn as much as you can about the situation – "Listen, listen listen".

- Try to see the problem from the other person's perspective.

The 7 Habits of Highly Effective People
Habit 5: **Seek First** to Understand, **Then** to be Understood

- Present things logically, not emotionally.

- Be credible, empathic, and logical.

The 7 Habits of Highly Effective People
Habit 6: Synergize

- Make the whole greater than the sum of its parts.

- Help everyone bring out the best in everyone else

$$2 + 2 = 5$$

@Faryane   @WebSciDL   3/10/2022

The 7 Habits of Highly Effective People

Habit 7: Renewal (Sharpen the Saw)

- Physical: Exercise
- Mental: Reading, thinking, visualizing, planning, writing
- Spiritual: Value clarification and commitment
- Social

OLD DOMINION
UNIVERSITY

- "What would you tell graduating seniors about having a successful career"

7 Actions for a Successful Career

@Faryane   @WebSciDL

The 7 Actions Necessary for a Successful Career

1. **<u>Enjoy</u>**. Find a job you enjoy, one that doesn't really feel like work.

   Feel good about what you do or do something else

The 7 Actions Necessary for a Successful Career

1. **Enjoy**. Find time to take care of your health.

   Work hard, but have fun.

   Life is short, so save time for yourself.

OLD DOMINION UNIVERSITY

The 7 Actions Necessary for a Successful Career

2. **<u>Learn</u>**. Continue to learn and expand your skill set.

   Listen, question, and learn.

   Learn about the business, the culture, and the politics

   of the organization to which you belong.

@Faryane   @WebSciDL

HSF, 3/10/2022

The 7 Actions Necessary for a Successful Career

2. <u>**Learn**</u>. Figure out what it takes to succeed.

Learn to manage up and down.

Learn how to take feedback, both positive and negative.

Learn how to communicate and market yourself and

your results.

The 7 Actions Necessary for a Successful Career

3. **Communicate**. Develop strong communication skills
– oral, written, and listening.
The best work is of little value if you can't
communicate it clearly and succinctly.

.

OLD DOMINION
UNIVERSITY

The 7 Actions Necessary for a Successful Career

3. **<u>Communicate</u>**.

Develop "active listening" skills.

When you have something valuable to say, say it.

The 7 Actions Necessary for a Successful Career

4. **Work hard**. The harder you work, the better you'll do. Work to build a network of peers, colleagues and mentors who can provide excellent advice and guidance.

OLD DOMINION
UNIVERSITY

The 7 Actions Necessary for a Successful Career

4. **<u>Work hard</u>**. Recognize what you know and you don't know.

   Take advantage of other people's knowledge.

@Faryane   @WebSciDL

The 7 Actions Necessary for a Successful Career

5. **Evolve**. Be prepared for changes in your career, and remember that every change is accompanied by new opportunities.

The 7 Actions Necessary for a Successful Career

5. **<u>Evolve</u>**. Challenge yourself.

   Find useful problems to work on.

   Be willing to tackle different problems.

The 7 Actions Necessary for a Successful Career

6. **Plan**. Figure out what you want to do in your career and your life. Talk to people who are doing what you want to do in 10 years and learn what experiences you will need to get there

The 7 Actions Necessary for a Successful Career

6. **Plan** If the criteria for success in your organization are incompatible with your beliefs and your style, maybe that organization is not the right place for you.

The 7 Actions Necessary for a Successful Career

7. **Share**. As your experience grows, share your knowledge

   with others.

   Find a way to give something back to society.

If everything is under control you're not going fast enough

- Mario Andertti

Final Remarks

- Keep an eye on your target (industry, academia)
- Go to internships
  - Apply for a fellowship
- Build your network/relationships.
  - Communicate with target people
- Be laser focused on one thing
  - No multi-tasking
- Give back to your community
  - Volunteer your time & skill
- Learn the tools needed in your research
- Learn common tools in your area of expertise

@Faryane   @WebSciDL

Final Remarks

- Make your resume & social media account
  - Separate work and personal
- Have a webpage - ePortfolio
- Read others work
  - Literature review is very important
- Read, read and read
- Take your courses as quick as possible
  - Then focus on the research
- Write. Practice writing
- Often pause & rethink
  - Re-route yourself

- It doesn't matter when to start
- It doesn't matter where to start
- All that matters is to start

- You don't need to build the thing you have imagined,
- Figure out fastest, simplest thing with higher probability of success
- You just need to take the first step

Simon Sinek

Questions & Comments

Program Committee Member:

(**CAPWIC**) ACM Capital Region Celebration of Women in Computing, 2020 - 2022
(**JCDL**), ACM/IEEE-CS Joint Conference on Digital Libraries, 2017 - 2022
(**ACM-W ODU Co-advisor**) ODU Campus Groups co-advisor for ACM-W, Fall 2021 - present

- For more information:
  - Email: poursardar@cs.odu.edu
  - https://faryaneh.github.io/

@Faryane

www.linkedin.com/in/faryaneh-poursardar

Recommended Videos

- [How to Achieve Your Most Ambitious Goals](#) | Stephen Duneier | TEDxTucson (18 min)

- [5 Rules to Follow as You Find Your Spark](#) | Simon Sinek (16 min)

- [The Growth Mindset](#) | Carol Dweck | Talks at Google (47 min)

@Faryane   @WebSciDL