Passion and Perseverance in Academia: Experience Sharing on Computer Information Systems Research

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My Background

• Education
  • Ph.D. in MIS (minor: Computer Science), U. Arizona
  • M.S. in ITM; B.B.A., Chinese U. of Hong Kong, Shatin, HK

• Scholarly Interest
  • Design science, data analytics, social media analytics, cybersecurity, machine learning, knowledge mgmt., health informatics, HCI

• Experience
  • Faculty member in computer information systems
  • Editorial roles in academic journals and conferences
  • Senior Member, AAAI/ACM/IEEE
  • Professional Member: AIS/AAAS/AmStat/INFORMS
Have you ever felt highly excited about the start of a research project, but as time went on your excitement and motivation started to wane?
Academic Research Projects

• Structured, dedicated effort developed to produce intellectual outcomes
  • Usually take very much time
  • Substantive intellectual products,
    • e.g., software, patent, dissertation, peer-reviewed publication

• Despite much time and effort put into projects, people often remember only the last step you completed
  • Most recent moment (≠ most exciting moment)
  • Your supervisor, manager, senior authority

• Research projects often fail because researchers do not know and do not prepare enough for completing the very last step
The Psychology of Academic Evaluation

- Human tend to remember the most exciting and the ending of something far more clearly than any other part
- Why?
- Our brains can process only limited information!
- The Peak-End Rule: We remember or judge an experience based on how we felt at its peak and at its end
- My doctoral dissertation (completed many years ago!)
  - Initial excitement
  - Final publication
  - Shaping my research direction
  - E.g., Data analytics research
Data Analytics (DA) in CS/IS: A Design Science Approach

Physical Science

Math / Stat / AI / Physics / etc.

Social Science

Sociology / Criminology / Political Science / etc.

Behavioral Science

Economics / Psychology / Cognitive Science / etc.

Design Science

New theories, models, algorithms, methods, constructs, artifacts, mechanisms, techniques, systems, technologies, etc.
Why so few people finish strong?

• At a project start, you have a lot of momentum: energy is high, problem is challenging but interesting, members are excited.

• By project end,
  • Energy is ___low___
  • Less elegant work becomes __not fun to work on__
  • Tasks are __mundane__
  • Our brains are then __________________________

• These tasks, if left undone, is like undoing all the exciting work you already put in since the project start.
When people lose momentum on a project, it is usually right around the time the shiniest, most interesting work gets completed.

If you want to achieve a strong finish, you should keep the momentum up. How?
Think big picture

• Goal and significance

• My DHS-funded project: Sentiment analysis of tweets on US immigration and border security
  • UA BORDER: DHS Center of Excellence for US Border Security

• Peak moment

• Sustaining the momentum

• Connecting with Experts and Students
Charting the Path from Peak to End

• Make the unglamorous a priority
  • Reframe “boring” stuff in your mind

• My experience in a State-funded cybersecurity project
  • Collaborated with faculty and students
  • Initial excitement and effort => “Peak” moment
  • Many iterations of developments and writing

• Tasks that still need to be done after the “peak”
  • Experiments and Data Analyses
  • Drafting, Writing, and Revising
  • Paper submission and revision
  • Handling all “obstacles” in a graceful manner
Preparing your mind, body, and environment

• If you work hard on a project, your effort will not be worth as much if you are not seen completing the project.

• So, follow through on every single step until you reach a great finish.
  • Get help from your team members, admin. staff, colleagues, students, etc.

• My experience in an NSF-funded project (http://uttyler.us.to/wchung/rsch/cic)
  • Community development and organizing national workshops
  • Great excitement when the crowds met and talked
  • More work on extended funding, coordination, and publications
  • Doing all the “unglamorous” work

• Preparing your mind, body, and environment to finish the project
  • Channel your ability to keep going
Building New Communities
Summary: Passion and Perseverance in Academia

1. Think big picture
   • Goal and project vision
   • Greater significance
   • Talk with your supervisor / manager
   • Connect with experts and students

2. Charting the path from peak to end
   • Reframe “boring” stuff in your mind
   • Make the unglamorous a priority

3. Preparing your mind, your body, and your environment
   • Channel your ability to keep going
   • Follow through on every single step until you reach a great finish
How will you achieve your “great finish”?
Thank you!

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