



Mitchell “Mitch” Turner

Distinguished Professor⁹⁵, Northwest University

Mitch is 55 years old and lives in the eclectic college town of Rhodes, Oregon, home of Northwest University.

Often times in the morning, you can spot Mitch listening to his iPhone and muttering out loud while he’s keeping healthy by walking to and from work. Commuting, exercising and learning at the same time is one of the ways Mitch makes time for new languages such as Spanish, German, Japanese, and Chinese¹⁰³.

Every moment in life matters to Mitch. He is driven to have an impact on things that really matter, such as the health of the whole Earth’s ecosystem, which is under threat in so many ways⁹⁸.

Background Knowledge and Skills

- Mitch is the Director of the Intelligent Systems Laboratory¹⁰⁸ at Northwest University. He spends a great deal of time collaborating with other scientists at Northwest and other universities, working on a diversity of projects from wildfire management to bird migration to teaching machines how to read. While at Northwest, Mitch has brought in \$30 million of grant funding¹⁰⁹.
- Mitch has a number of important roles outside of Northwest, including serving as the President of the Association for the Advancement of Artificial Intelligence¹¹⁰, and also being the CTO and Co-Founder of a local big data / machine learning startup¹⁰⁹.
- Mitch is a renowned figure in the artificial intelligence community and often travels to important conferences around the world. For example, he was recently attended the “Future of Life” conference in Puerto Rico. Here Mitch met with AI and industry leaders, including Elon Musk, CEO of Tesla Motors and SpaceX, to discuss aspects of AI important to the entire world, including to what extent the continued evolution of artificial intelligence poses an existential threat to mankind¹¹¹.
- Building a great group of machine learning faculty, staff, and students at Northwest University is a profound achievement for Mitch¹⁰². He knows there is an excellent team of intelligent, thoughtful scientists to carry on the important work that Mitch’s group is involved in.
- One of Mitch’s talents is making complex systems easy to understand, being able to connect small details to the big picture.

- Many of Mitch's colleagues regard him as a "renaissance man" of science⁹⁶. Mitch's broad understanding of many branches of science enabled him to bring together leaders from the agriculture, engineering, forestry, and science graduate programs at Northwest University to create a combined program in Ecosystem Informatics that can tackle hard cross-domain problems such as modeling the ecosystems of the entire world¹⁰¹.

Motivations and Strategies

- Mitch is an expert with the tools he uses most often¹¹. For example, Mitch will make special macro commands in his email client to perform complex steps of actions more quickly¹⁰⁴.
- Mitch learns new tools only when they part of important research or if he knows they will save him time^{2,104}. He doesn't spend his little free time trying new software tools or exploring obscure functionality of the software applications and tools he uses^{6,104}.
- When Mitch organizes information, he uses a combination of tags and folders³⁵. He has developed a sophisticated tag schema over time¹⁴ and uses this tag schema frequently³⁷ to organize his email¹⁰⁴. In Mitch's ideal world, all of his information would be organized and easily accessible using tags¹⁰⁴.
- Mitch tags his email with a rich set of tags that supports project, task, people, and event management^{17,104}. Email is the cerebral cortex for much of his world^{40,21}. Mitch uses the calendar built into his email client to manage his time¹⁰⁴. **Mitch's assistant has access to his calendar to streamline travel and event planning¹⁰⁴.**
- While Mitch maintains a todo list in Emacs, Mitch's inbox also represents "work to be done"¹⁹. A significant portion of Mitch's task management revolves around "inbox management"²¹.
- Finding a way to save 15 minutes of time a day would make Mitch very happy¹⁰⁵. **Many weeks, Mitch only has three to four hours of unallocated time on his calendar¹⁰⁶.**
- Mitch will often only try something once. If it doesn't work, he doesn't go back to it⁵⁵.
- The main goals of Mitch's information organization strategies are quick retrieval and context recovery. Once he finds a strategy that works for him, he tends to stick to it¹⁰⁴.
- Every now and then, Mitch will pick up and learn a new tool to help him better organize some part of his work⁴⁸. **Most recently, Mitch learned OneNote so he could better organize his high volume of meeting and conference call notes¹⁰⁴.**

Attitudes about Technology

- Mitch likes technology to be simple and predictable²⁰. He depends on the software applications he uses to get work done quickly and efficiently³⁶. Much of this depends on retrieval²².

- Mitch is interested in tools that can consistently save him time, even if they aren't perfect³⁶. He will take the time to do things today that will save him time tomorrow. This is how Mitch puts time in the bank¹⁰⁴.
- Mitch is an early adopter of using machine learning to help him be more efficient and effective with the various communication, knowledge management, task management, project management, and other tasks related to his work⁷.
- Mitch appreciates when there is consistency between the small cognitive actions he takes in an application and his bigger picture cognitive model of how things should work¹.
- As **Mitch is a machine learning expert**, he is often aware of how his actions might affect how his intelligent email assistant is working^{53,56}. In his ideal world, the assistant would be invisible and something he wouldn't even remember that it's there working in the background⁵².
- Most of the workflows required for Mitch's job as a professor flow through email²¹. As much as Mitch uses an intelligent assistant to help with tags, he would also the assistant to help him save time dealing with these workflows⁵⁴.

Software Environment

- **Mitch originally was a UNIX user** and still uses some UNIX tools, such as Emacs, which he uses to manage his primary todo list^{19,104}. He currently works in a Microsoft Windows environment as this is the only environment that supports the advanced intelligent email assistant that he depends on to help him manage all the email he gets^{11,104}.
- Mitch has used an intelligent email tagging assistant that integrates into Microsoft Outlook for the past seven years¹⁰⁴.
- Mitch depends on his lightweight notebook computer for almost all of his communication and information storage¹⁰⁴.
- Along with Microsoft Outlook, Mitch makes extensive use of Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Microsoft OneNote, and Adobe Acrobat¹⁰⁴.
- **While Mitch knows how to program in Lisp, the little time he spends programming is mostly using R, a language for mathematics, statistics, and machine learning**¹⁰⁴.

Using Software

- Mitch makes decisions regarding when to create tags and when to use certain features of his intelligent email assistant based on a decision-theoretic framework that is based on his own perceptions of cost, risk, investment, and pay-off^{2,3,5,6}.
- Using tags is a notational strategy for Mitch. Tags also function as mnemonic cues^{TODO} to help Mitch recover context^{4,TODO}.

- As many of Mitch's tags represent work to be done, when Mitch is using tags, and when the intelligent email assistant is helping Mitch with tags, these actions are effectively performing tasks that directly relate to his goals in using email⁸.
- Similarly, when Mitch is using tags in email, as many of these tags represent some aspect of task management, Mitch may experience any of these common seven problems¹⁶:
 - Keeping track of lots of concurrent actions: One's own to-dos and to-dos one expects from others.
 - Marking things as important or outstanding amongst the less important items.
 - Managing activity extending over time or keeping track of threads of activity and discussions.
 - Managing deadlines and reminders, which may be associated with particular messages or other content.
 - Collating related items (e.g., an extended thread or responses to a survey) and associated files and links.
 - Application switching and window management.
 - Most important, getting a task oriented overview, at a glance, rather than scrolling around inspecting folders.
- Due to the high demands on Mitch's time and project and information overload, using software can be a lot more stressful at times, especially when it doesn't work well. It is important for software to help Mitch recover context⁶⁶.
- With email, if there a lot of important threads in a given day, Mitch may feel more overloaded⁶⁷.
- Mitch uses email to triage important work⁸⁶, such as moderating the machine learning section of the arXiv web journal¹⁰⁴.
- Time and time pressure have a strong effect on how and why Mitch uses his software⁹².