

MATHIAS S. FLECK
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profile Cognitive Psychology PhD, data scientist, team manager, game developer, skilled presenter, and passionate advocate of the end-user. Author or co-author of eight published papers. Founded videogame development and computer consulting companies.

education

2003 - 2009 **DUKE UNIVERSITY** **DURHAM, NC**
Doctor of Philosophy in Psychology & Neuroscience, May 2009. Dissertation identified sources of user error and strategies to improve performance in airport security, radiological screening, and other critical visual search tasks. Vertical Integration Program mentor. Student Chair of Psychology & Neuroscience Colloquium.

1995-1999 **UNIVERSITY OF CHICAGO** **CHICAGO, IL**
Bachelor of Arts in Psychology, June 1999. Matriculated in Early Entrance program following junior year of high school. Graduated with General Honors.

experience

2003 - 2009 **DUKE UNIVERSITY** **DURHAM, NC**
PhD Graduate and Research Associate; Department of Psychology & Neuroscience
Led 5-person research team in a cognitive psychology laboratory examining visual perception and effect of videogames on enhanced skill performance.

- Managed 3-5 concurrent projects studying visual cognition and effect of gaming on behavior. Conducted over 20 experiments, from design and Matlab coding to statistical analysis and write-up, resulting in 8 published papers. Strength of research and relevance to national safety led to individual research grants totaling \$40K through the competitive National Institutes of Health NRSA fellowship and Duke University mentorships.
- Negotiated collaborative research partnerships with Nike, the Department of Homeland Security, and Duke Advanced Imaging Laboratories. Resulting projects generated solutions to improve perception in sports, accurately detect dangerous items in airport security, and identify abnormalities in medical imaging.
- Helped secure over \$800K in funding from the Army Research Office, the Institute of Homeland Security Solutions, and the National Institutes of Health. Presented progress reports to Program Officers during site visits.
- Delivered presentations at yearly conferences (up to 25,000 attendees) and in several Duke colloquia. Worked with Duke Office of News & Communication to generate video and articles conveying research to general public.
- Taught 5 courses ranging from small discussion sections to large lectures (100+ students). Mentored several lab members each year formulating research plans, teaching programming, and sharing analysis techniques.

2001 - 2003 **FLEXIBLE SOLUTIONS, INC.** **LONG BEACH, CA**
Consultant

Owned small business providing computer and web services to local and national clients.

- Designed and coded interactive websites using Flash, Photoshop, Illustrator, and Dreamweaver. Developed unified visual themes for clients in printed and online promotional materials.
- Grew service contracts by 40% over 6 months through successful print and digital marketing campaign. Fostered local partnerships and promotional programs as liaison to Long Beach Business Association.

1999 - 2001 **FLEXGAMES, LLC** **LONG BEACH, CA**
Co-Founder and Developer

Formed company to develop entertainment software for Windows, Macintosh, and videogame consoles.

- Constructed business plan and design document to procure over ~\$60K/year in private funding. Presented concept demonstrations to prospective publishers at Game Developers Conference.
- Conceived, designed, and programmed 3D action/strategy videogame title in OpenGL and C/C++. Coded 50% of the game including object/game routines, camera behaviors, and a homegrown physics engine.
- Developed user interface and artwork, directing 3-person graphics team from conceptual sketches to final models. Generated 2D textures and 3D structures in Photoshop and 3DS Max. Built and tested 6 playable levels.
- Created interfaces and graphics for online card and board games at flexgames.com, which currently hosts over 6,000 registered players.

skills Matlab, C/C++, HTML, Xcode, Photoshop, Illustrator, Flash, Fireworks, SPSS, Office, iWeb, basic German

- awards**
- NIH Ruth L. Kirschstein NRSA Predoctoral Fellowship, 2008
 - Duke Vertical Integration Program Mentorship, Psychology & Neuroscience, 2007, 2008
 - Conference Travel Fellowship, Duke University, 2007
 - National Science Foundation Predoctoral Fellowship Honorable Mention, 2005

- publications**
- **Fleck, M.S.**, Samei, E., & Mitroff, S.R. (in press). Generalized ‘satisfaction of search’: Adverse influences on dual-target search accuracy. *Journal of Experimental Psychology: Applied*.
 - Mitroff, S.R., Arita, J.T., & **Fleck, M.S.** (2009). Staying in bounds: Contextual constraints on object file coherence. *Visual Cognition*.
 - Davis, S., Dennis, N., Daselaar, S., **Fleck, M.S.**, & Cabeza, R. (2008). Què PASA? The posterior-anterior shift in aging. *Cerebral Cortex*.
 - **Fleck, M.S.** & Mitroff, S.R. (2007). Rare targets are rarely missed in correctable search. *Psychological Science*.
 - **Fleck, M.S.**, Daselaar, S.M., Dobbins, I.G., & Cabeza, R. (2006). Role of prefrontal and anterior cingulate regions in decision-making processes shared by memory and non-memory tasks. *Cerebral Cortex*.
 - Daselaar, S.M., **Fleck, M.S.**, Prince, S., & Cabeza, R. (2006). The medial temporal lobe distinguishes old from new independently of consciousness. *Journal of Neuroscience*.
 - Daselaar, S.M., **Fleck, M.S.**, Dobbins, I.G., Madden, D.J., & Cabeza, R. (2006). Effects of healthy aging on hippocampal and rhinal memory functions: An event-related fMRI study. *Cerebral Cortex*.
 - Daselaar, S.M., **Fleck, M.S.**, & Cabeza, R. (2006). Triple dissociation in the medial temporal lobes: recollection, familiarity, and novelty. *Journal of Neurophysiology*.

personal Enjoy videogames, board games, social media, learning iPhone game development, travel, guitar, drums, and softball