

Brian J. Stankiewicz, Ph.D.

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OBJECTIVE

Obtain a technical development position at a forward-looking, growth minded company that can leverage my 20+ years of experience in research and development to create new business opportunities.

SKILLS

- Programming Languages: Python (proficient), Matlab (capable), JavaScript (capable)
- Machine Learning: Deep Learning, Neural Networks, Reinforcement Learning, Markov Modeling, Natural Language Processing
- Cloud Development: Amazon Web Services (AWS)
- Publications: 20+ Research papers, 20+ Patents
- Agile: Eight years experience using agile. Product Owner, Scrum Master trained through [Scrum Inc.](#)

Program Champion: I identify technical and business opportunities that are on the horizon and provide technical leadership and collaborate with business leaders to create a clear technical vision supported by business opportunities. I am able to communicate the vision to senior leadership (e.g., CTO, CEO, SVPs). I excel in developing clear, ambitious technical visions that technical teams can execute on while business leaders can understand so they can build new business growth.

Technical Leadership: In building a technical vision, I seek to understand the critical basic, and applied research in the relevant area (usually, machine learning, computer vision, natural language processing, data science). In this process I will build the intellectual property roadmap that includes evaluating existing intellectual property along with identifying potential opportunities. My expertise has been sought for technical evaluations of mergers and acquisitions multiple times in 3M.

Organization Creation: Through program championing, I have identified opportunities for 3M in new technical areas and made the case that 3M should invest in building these capabilities. By starting with small transformations within the company to serve as 'proof points', these efforts ultimately have led to the creation of multiple new organizations within 3M (AI Lab, Data Science Lab, Materials Informatics Team).

EXPERIENCE

3M Corporate Research Labs, St. Paul, MN— Principal Data Scientist

Jul 2017 – Present

Drove and developed the execution and long-term vision of 3M Materials Informatics effort that is transforming how 3M develops new materials by integrating Data, Analytics and Automation into our research workflow. Identified and scoped the opportunity and presented it to senior 3M leadership.

- Technical lead for Materials Informatics in 3M Corporate Research Labs.
- Product Owner: Agile-Scrum cross functional team (software, mechanical, material science, artificial intelligence). Created technical and business roadmaps.
- Accelerated research and development by creating and nurturing external relationships with vendors ([Citrine](#), [Chemspeed](#), [LabMan](#)) and universities [University of British Columbia](#), [University of Chicago](#), [Argonne National Labs](#).

3M Health Information Systems, St. Paul, MN— Principal Data Scientist

Jul 2012 – Jul 2017

Established the first Data Science Lab for 3M's Health Information Systems division. Developed new Natural Language Processing (NLP) applications and created an intellectual property portfolio for those opportunities. Technical lead of a cross-company opportunity between Google-Verily and 3M-HIS.

- Established Data Science Lab in 3M Health Information Systems
- Technical lead for 3M and Google-Verily [Performance Matrix](#) collaboration.
- Identified and developed new technologies that converted “Data to Dollars” for 3M's healthcare business.
- Developed methods and tools for working with Protected Health Information (PHI) data. Developed new methods for protecting 3M HIS data that supported new product development.

3M Corporate Research Labs, St. Paul, MN— Senior Research Scientist

Jul 2007 – Jul 2012

Established the first 3M Corporate Research Artificial Intelligence lab. Hired 20 scientists that included data scientists, machine learning experts and data engineers.

- Founder: 3M Corporate Research Labs (CRL) Artificial Intelligence Lab. First AI lab in 3M corporate structure that since its inception has spawned many new opportunities and labs throughout 3M.
- Technical lead on [Visual Attention Service](#). Create computer vision algorithms for predicting where visual attention will be allocated in an image.

University of Texas at Austin, Austin, TX— Assistant Professor

Jun 2001 – Aug 2007

Developed a research program focused on computer vision, virtual reality, robotics, and human navigation. Developed low-vision navigation aid technology that was patented and ultimately licensed. Taught courses in cognitive science, robotics and computer science.

- Developed a research program focused on computer vision, virtual reality, robotics, and human navigation.
- Created the second largest VR working lab in the nation at the time.
- 20+ publications
- \$1.2MM in research grants.

University of Minnesota, Minneapolis, MN— Postdoctoral Research Scientist

Jun 1997– Jun 2001

- Human and computer vision & Human and robot navigation

PROJECTS

Materials Informatics — *Identified the opportunity to accelerate 3M material science research by developing a capability in Materials Informatics. Led the first proof-of-concept project to demonstrate the value in storing and connecting 3M research formulations with their characterization data. Demonstrated the ability to apply machine learning techniques to predict material performance from small data sets. Developed methods for streamlining the scale-up process from lab to manufacturing by bringing automation into the 3M labs. My experience applying AI in an advanced manufacturing context has taught me how to effectively deliver technology in collaboration with experts in disparate fields (materials science, ai, software engineering, automation) across a wide range of technical and non-technical applications.*

[Visual Attention Service](#) — Product owner for the Visual Attention Service is an on-line application that simulates the neurological properties of the human visual system to predict what people will notice in a scene in the first 3–5 seconds. Scoped and led the technical development. Developed the IP strategy and contributed to the business model. My experience of building 3M’s first commercial AI system taught me the value of educating senior leadership and identifying existing talent with untapped potential.

[Performance Matrix](#)— Served as a product owner for a joint 3M–Google technical team to develop a proof of concept and initial production system. Served to ensure that the teams from 3M and Google–Verily were able to move as quickly as possible by identifying potential impediments and quickly communicating to 3M senior management and/or my Google–Verily peers the issue, potential solutions and drove the process until the issue was resolved. My experience with working on a collaborative project with two large corporations in diverse markets with strong, but different cultures taught me how to effectively listen and communicate across these challenging lines.

EDUCATION

UCLA, Los Angeles, CA— *Ph.D. Cognitive Science*

Jun 1991– Jun 1997

Dissertation focused on human and computer vision and the role that attention plays in creating robust representations of object shape. Developed neural network models of human object recognition that generated novel predictions of human behavior and tested those predictions by running empirical studies on the human visual system.

- Advisor: John E. Hummel, Ph.D.
- Thesis: The role of attention in viewpoint-invariant object recognition.

University of California at Irvine, Irvine, California— *B.A. Cognitive Psychology*

Sept. 1986– Jun 1991

Worked in the Brain Imaging Center, David LaBerge lab in human visual attention. Photo editor for the New University newspaper.

AWARDS

3M: Circle of Technical Excellence & Innovation: 2010, 2011, 2016, 2017

UT Austin: Ready for Commercialization Award. 2006

Patents & Patent Applications

1. [System, method and apparatus for providing navigational assistance](#) BJ Stankiewicz, AR Cassandra US Patent 7,620,493
2. [Systems and methods for optimizing a scene](#) Brian J Stankiewicz, Brian E Brooks, Brian L Linzie, Nathan J Anderson, Michael Kelly Canavan, Glenn E Casner, Timothy J Gardner, David K Misemer. US Patent 8,478,111
3. [Systems and methods for multi-perspective scene analysis](#) Brian J Stankiewicz, Brian E Brooks, Brian L Linzie, Nathan J Anderson, Michael Kelly Canavan, Glenn E Casner, Timothy J Gardner, David K Misemer. US Patent 8,577,156
4. [System and method for concurrently conducting cause-and-effect experiments on content effectiveness and adjusting content distribution to optimize business objectives](#). Brian E Brooks, Brian J Stankiewicz, Jonathan B Arthur, Craig G Markell, Brian L Linzie. US Patent 8,458,103

5. [Systems and methods for note recognition](#). Gabriel A Biller, Kristopher W Clover, Masuma W Henry, Stephen M June, Brian L Linzie, Robert D Lorentz, David M Mahli, Richard J Moore, Cristin E Moran, Tasuku Nakayama, Scott D Pearson, Dennard J Powell, Olen Ronning, Guruprasad Somasundaram, Brian J Stankiewicz, Diane R Wolk. **US Patent 9,070,036**
6. [Systems and methods for note recognition](#). Gabriel A Biller, Kristopher W Clover, Masuma W Henry, Stephen M June, Brian L Linzie, Robert D Lorentz, David M Mahli, Richard J Moore, Cristin E Moran, Tasuku Nakayama, Scott D Pearson, Dennard J Powell, Olen Ronning, Guruprasad Somasundaram, Brian J Stankiewicz, Diane R Wolk. **US Patent 9,378,426**
7. [Systems and methods for evaluating robustness of saliency predictions of regions in a scene](#). Brian J Stankiewicz, Brian E Brooks, Brian L Linzie, Nathan J Anderson, Michael Kelly Canavan, Glenn E Casner, Timothy J Gardner, David K Misemer. **US Patent 8,811,753**
8. [Systems and methods for managing notes](#). Willem V Bastiaens, Gabriel A Biller, Kristopher W Clover, Brian R Hackerson, Masuma W Henry, Stephen M June, Brian L Linzie, Robert D Lorentz, David M Mahli, Richard J Moore, Cristin E Moran, Michael E O'brien, Scott D Pearson, Dennard J Powell, Olen Ronning, Guruprasad Somasundaram, Brian J Stankiewicz, Diane R Wolk. **US Patent 9,563,696**
9. [Systems and methods for improving visual attention models](#). BE Brooks, BJ Stankiewicz, BL Linzie. **US Patent 10,515,163**
10. [Estimating and predicting tooth wear using intra-oral 3D scans](#) Evan J Ribnick, Guruprasad Somasundaram, Brian J Stankiewicz, Aya Eid, Ravishankar Sivalingam, Shannon D Scott, Anthony J Sabelli, Robert D Lorentz. **US Patent 9,737,257**
11. [Obfuscating data using obfuscation table](#). BJ Stankiewicz, EC Lobner, RH Wolniewicz, WL Schofield. **US Patent 10,503,928**
12. [Systems and method for obfuscating data using dictionary](#). BJ Stankiewicz, EC Lobner, RH Wolniewicz, WL Schofield. **US Patent App. 15/036,537**
13. [Systems and methods for predicting hvac filter change](#). AR Fox, EC Lobner, TM Meyer, BJ Stankiewicz. **US Patent App. 15/532,186**
14. [Identification of codable sections in medical documents](#). Kavita A Ganesan, Brian J Stankiewicz, David E Yarowsky, Anna N Rafferty, Michael A Nossal, Anthony R Davis. **US Patent App. 15/517,648**
15. [Identification and analysis of copied and pasted passages in medical documents](#). BJ Stankiewicz, KS Peterson, GL Garrison. **US Patent App. 15/303,334**
16. [Activity Recognition Using Accelerometer Data](#). EC Lobner, JW Howard, RJ Moore, JF Schumacher, BJ Stankiewicz. **US Patent App. 15/117,943**
17. [Impairment detection](#). EC Lobner, JW Howard, JF Schumacher, BJ Stankiewicz, BL Weaver. **US Patent App. 15/511,310**
18. [Systems and methods for generating random numbers using physical variations present in material samples](#). Jennifer F Schumacher, Glenn E Casner, Yanina Shkel, Andrew P Bonifas, Anthony J Sabelli, Brian J

Stankiewicz, John A Wheatley, Ravishankar Sivalingam, Robert W Shannon. **US Patent 10,331,411**

19. [Identification of low-efficacy patient population](#). BJ Stankiewicz, JF Schumacher, BE Brooks, NA Asendorf, KS Peterson **US Patent App. 15/773,207**
20. [Batch authentication of materials for automated anti counterfeiting](#). Anthony J Sabelli, Jennifer F Shumacher, Yanina Shkel, Brian J Stankiewicz, Glenn E Casner, John A Wheatley, Andrew P Bonifas, Ravishankar Sivalingam. **US Patent App. 15/533,290**
21. [Query optimizer for combined structured and unstructured data records](#). BJ Stankiewicz, NA Asendorf, JF Schumacher, KS Peterson. **US Patent App. 16/092,483**
22. [Medical protocol evaluation](#). BJ Stankiewicz, JF Schumacher, BE Brooks, NA Asendorf, KS Peterson, **US Patent App. 15/773,233**

Sample Publications ([Google Scholar Page](#))

1. *The skeleton in the cognitive map: A computational and empirical exploration*. B Kuipers, DG Tecuci, BJ Stankiewicz. *Environment and behavior* 35 (1), 81-106
2. *The role of attention in priming for left-right reflections of object images: Evidence for a dual representation of object shape*. BJ Stankiewicz, JE Hummel, EE Cooper. *Journal of Experimental Psychology: Human Perception and Performance* 24 (3), 732.
3. *An architecture for rapid, hierarchical structural description*. JE Hummel, BJ Stankiewicz. *Attention and performance XVI: Information integration in perception and communication*
4. *Lost in virtual space: Studies in human and ideal spatial navigation*. BJ Stankiewicz, GE Legge, JS Mansfield, EJ Schlicht. *Journal of Experimental Psychology: Human Perception and Performance* 32 (3), 688
5. *Using performance efficiency for testing and optimization of visual attention models*. BJ Stankiewicz, NJ Anderson, RJ Moore. *Image Quality and System Performance VIII* 7867, 78670
6. *The effect of layout complexity on human and ideal navigation performance*. BJ Stankiewicz, GE Legge, E Schlicht. *Journal of Vision* 1 (3), 189-189