Chris **Brozdowski**, Ph.D.

DATA SCIENTIST · DATA ENGINEER · PROJECT MANAGER

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"Efficiency is doing things right; effectiveness is doing the right things." – Peter Drucker

Profile

I am driven to find efficiencies by applying automation and reforming processes. I have 8+ years of experience in data management, analytics, team leadership, and dynamically acquiring project-relevant skills. In my current start-up position, I develop SQL databases for open-source and client projects using a Python interface, while also developing scientific expertise and leading graphic design for social media and conference presentations. I want to be the rising tide that lifts all ships as I continue to grow as a data engineer and project manager.

Education

San Diego State University & University of California, San Diego — *San Diego, California*

PH.D. IN LANGUAGE AND COMMUNICATIVE DISORDERS — *2013 - 2018*

University of Connecticut — *Storrs, Connecticut*

B.S., COGNITIVE SCIENCE & LINGUISTICS AND PSYCHOLOGY, MAGNA CUM LAUDE — *2009 - 2013*

Experience

DataJoint — *Houston, TX*

NEUROSCIENCE DATA ENGINEER II — *2021 - Present*

- Develop data management and analysis Python pipelines for multi-site neurobiology research to improve efficiency through SQL automation.
- Work with clients to build custom data infrastructure, including API import/export mechanisms, expanding open source pipelines.
- Network with software and data standards developers in the field to develop partnerships and mutual sustainability commitments.
- Conduct User Experience interviews on novel projects to improve tool utility. Leverage interview format into into social media content.
- Develop internal graphic design asset pool to improve branding cohesion across social media, documentation, and scientific presentations.
- Parameterize integration testing and standardize documentation practices to improve contributor experience for open source projects.
- Reformed internal Slack communication standards and GitHub project management practices to promote cross-team collaboration and efficiency.

Brain Development Lab, Vanderbilt University — *Nashville, TN*

POSTDOCTORAL RESEARCHER — *2019 - 2021*

- Implemented experimental and data management procedures for five-year R01 grant to ensure reliable testing and open-science transparency.
- Used Unix, MATLAB, and R to analyze open-source datasets for contribution to scientific literature on the neural correlates of reading skill.
- Mentored undergraduate and masters students in the development of key research skills, including data integrity and standardization best practices.

Cognitive Semiotics Lab, RWTH Aachen University — *Aachen, Germany*

POSTDOCTORAL RESEARCHER — *2018 - 2019*

- Developed novel psycholinguistic analyses using motion capture technology and developed researcher manual for existing hardware.
- Collaborated with acoustics and virtual reality teams to contribute to the scientific literature on naturalism-perception effects in virtual reality.
- Taught and co-taught undergraduate and masters courses related to statistics, psychology, and linguistics across local and partner universities.

Laboratory for Language and Cognitive Neuroscience, San Diego State University — *San Diego, CA*

GRADUATE RESEARCHER — *2013 - 2018*

- Adapted psycholinguistic paradigms for sign language research, including spatial cognition, co-thought gesture, and motor simulation.
- Automated key aspects of experimental design across projects, including gesture transcription, fMRI task randomization, and stimulus presentation.
- Mentored a team of research assistants in statistical methods, transcription standardization, project management, and automation techniques.
- Shared scientific findings via conference posters, verbal presentations and manuscripts for peer-reviewed publications.

***Various Labs*, University of Connecticut** — *Storrs, CT*

RESEARCH ASSISTANT — *2010 - 2013*

- Led grant-funded projects on (a) eye-tracking as a measurement of semantic network models and (b) verb use among language-deprived signers.

Skills

Programming & Analysis	Python, MATLAB, GitHub, Docker, Shell, LaTeX, relational databases, R, Excel, mixed-effects models.
Media & Graphic Design	Adobe Photoshop & Premiere, ffmpeg, data visualization, social media management, brand cohesion.
Scientific Expertise	Pose estimation via machine learning models, neuroinfomatics methods, sign language psycholinguistics.
Communication	Scientific writing, dynamic educational public speaking, delegation, team leadership.
Languages & Hobbies	English, French, American Sign Language. D&D, improv comedy, bouldering.

Honors & Awards

2018	**Travel Award**, U. of Michigan NIH Training Course for fMRI. Theory and practice via MATLAB & SPM.	*Ann Arbor, MI*
2016	**Travel Award**, SDSU Center for Clinical and Cognitive Neuroscience Travel Award for TISLR 12	*Melbourne, ASTL.*
2013	**NSF Honorable Mention**, National Science Foundation Graduate Research Fellowship Program	*Storrs, CT*
2012	**Grant Award**, U. of Connecticut Summer Undergraduate Research Fund Recipient	*Storrs, CT*
2009-13	**Dean's List**, U. of Connecticut academic honor	*Storrs, CT*

Teaching

2018-19	**Lecturer**, *Language, Media and Mind*, *Linguistic Methods*, and *Linguistic Approaches and Applications*	*RWTH Aachen U.*
2013-14	**Teaching Assistant**, *Sign Languages and Deaf Culture*	*San Diego State U.*
2013	**Tutor**, *Intro. to Cognitive Science* and *Psychology of Language*	*U. of Connecticut*

Academic publications

Manuscripts

Emmorey, K., **Brozdowski, C.**, & McCullough, S. (2021). The neural correlates for spatial language: Perspective-dependent and -independent relationships in American Sign Language and spoken English, *Brain and Language*, 223, 105044.

Brozdowski, C. & Booth, J.R. (2021) Reading skill correlates in frontal cortex during semantic and phonological processing. *PsyArXiv*.

Brozdowski, C., Secora, K., & Emmorey, K. (2019). Assessing the Comprehension of Spatial Perspectives in ASL Classifier Constructions. *The Journal of Deaf Studies and Deaf Education* 24(3), 214-222.

Brozdowski, C. & Emmorey, K. (2020) Shadowing in the manual modality. *Acta Psychologica*, 108, 103092.

Presentations

Brozdowski, C., Gunalan, K., Nguyen, T., Dincer, T., & Yatsenko, D. (2022). Automated Research Workflows for Pose Estimation, Neuromatch Academy, Virtual.

Gunalan, K., **Brozdowski, C.**, Nguyen, T., Dichter, B., Ruebel, O., Ly, R., & Yatsenko, D. (2022). Automated analysis and sharing of neuroscience data using DataJoint, Neurodata Without Borders, and DANDI. 8th Annual BRAIN Initiative Meeting, Virtual.

Dincer, T., Nguyen, T., Gunalan, K., **Brozdowski, C.**, & Yatsenko, D. (2022) A Complete Data Pipeline for Calcium Imaging in DataJoint. INCF Assembly, Virtual.

Kartheiser, G., Kurz, K., Emmorey, K., **Brozdowski, C.**, & Hauser, P. (2022). Learning Sign Language as a Second Language Facilitates Nonlinguistic Spatial Cognitive Skills. International Conference on Sign Language Acquisition, Virtual.

Brozdowski, C., Scruggs, A., Quinto-Pozos, D., Schuele, M., & Booth, J.R. (2020; canceled). Mapping reading networks in deaf & hearing children considering language modality. Society for the Scientific Study of Reading, Long Beach, California.

Ehret, J., Stienen, J., **Brozdowski, C.**, et al. (2020) Evaluating the Influence of Phoneme-Dependent Dynamic Speaker Directivity of Embodied Conversational Agents' Speech. Paper presented at ACM International Conference on Intelligent Virtual Agents, Glasgow, United Kingdom.

Brozdowski, C., & Emmorey, K. (2019). Using transitional information in sign and gesture prediction. Poster presented at Theoretical Issues in Sign Language Research, Hamburg, Germany.

Brozdowski, C., Tewari, A., & Mittelberg, I. (2019). Purposeful and Transitional Velocity among Sign Language Users: A Motion Capture Study. Poster presented at LingCologne2019: Multimodality, Cologne, Germany.

McCullough, S., **Brozdowski, C.**, & Emmorey, K. (2019, March). Neural correlates for comprehending perspective-independent and perspective-dependent spatial expressions in ASL and English. Poster presented at the Cognitive Neuroscience Society, San Francisco.

Brozdowski, C., & Emmorey, K. (2018, July). Shadowing linguistic and non-linguistic body movements. Paper presented at the International Society for Gesture Studies, Cape Town, South Africa.

Brozdowski, C., Emmorey, K. (2016). Co-Thought Gesture in Bimodal Bilinguals. Poster presented at the 12th Conference on Theoretical Issues in Sign Language Research. Melbourne, Australia.

Brozdowski, C., Gordils, J., Magnuson, J. (2013). Contra the Qualitatively Different Representation Hypothesis (QDRH), Concrete Concepts Activate Associates Faster than Abstract Concepts. Paper presented at the Annual Meeting of the Psychonomic Society, Toronto, Canada.

Brozdowski, C., Gordils, J., Magnuson, J. (2013). Using Text Instead of Pictures in the Visual World Paradigm: Phonological, Semantic, and Perceptual Similarity Effects. Poster presented at the Annual Meeting of the Psychonomic Society, Toronto, Canada.