

NAME: Nadine Charanek

CURRENT POSITION: Ph.D. Candidate, ABD

CITIZENSHIP: Canada

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Department of Cognitive Science

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EDUCATION

PhD, Cognitive Science, Carleton University, Canada (2021-2026)

Thesis: Cognitive Trade-Offs at the Edge of Memory: Multilingualism, Strategy, and Human Limits

M.A. Applied Linguistics and TESOL, Lancaster University, UK (2019)

Specializing in primate visuospatial memory and second language acquisition

Thesis: The Visuospatial Working of Serial Order in Humans and Chimpanzees: The Possible Influence of Language on Recall

First Class Honours

B.Ed. in TEFL, Lebanese International University, Lebanon (2015)

Specializing in linguistics and second language teaching and learning

Distinction Status

AWARDS & DISTINCTIONS

Hamlin Graduate Award (2023)

Competitive internal award supporting graduate research excellence at Carleton University

PhD Student of the Year Award from FindaPhd (2023)

International award granted to a single doctoral researcher worldwide chosen from thousands of applicants in recognition of exceptional research excellence, rigour, and impact

P.D. McCormack Award (2022)

Merit-based graduate award recognizing outstanding academic performance in Cognitive Science

Academic Excellence Scholarship (2012–2015)

Three-year competitive scholarship covering tuition based on top academic standing at the Lebanese International University

CERTIFICATES & PROFESSIONAL DEVELOPMENT

Certificate in University Teaching (2024), Carleton University, Ottawa, Canada

CTAS Certificate in Teaching Assistant Skills (2021), Carleton University, Ottawa, Canada

CELTA Certificate of English Language Teaching to Adults (2016), Cambridge University English Examinations, Canada

Women in Defence and Security Mentoring Program (2025-2026), General Dynamics & CAE sponsored

EXPERIENCE

TEACHING EXPERIENCE**Contract Instructor**

Department of Cognitive Science, Carleton University, May–Dec 2022; Sept 2024–Apr 2025

Taught first-year and upper courses, including CGSC1001 “Mysteries of the Mind” and CGSC3501 “Introduction to Cognitive Neuroscience” in both seminar and large-lecture formats, including classes of more than 300 students. Topics included foundations of psychology, neuroscience of the mind and brain, artificial intelligence, clinical and subclinical disorders, animal cognition, and development. Designed and delivered lectures using evidence-informed teaching methods and interactive technologies such as Nearpod and WooClap. Created exams, assignments, and learning materials, and supported students in academic writing and fundamental concept mastery. Facilitated live demonstrations and in-class experiments to enhance engagement and promote deeper understanding. Received consistently positive feedback on clarity, organization, and approachability from students and departmental evaluators.

Teaching Assistant

Department of Cognitive Science, Carleton University, Sept 2021–Apr 2022; Jan 2023–Aug 2024; May 2025–2026

Supported course delivery through leading tutorials, facilitating discussions, and preparing lesson materials across multiple undergraduate courses. Provided individualized academic support to students with diverse learning needs and delivered constructive feedback on assignments and examinations. Contributed to departmental curriculum development by leading the undergraduate Cognitive Science Honours program review and advising the department on potential updates to program structure and academic policies.

Teacher (K–12 Education)

Nibras International School, Dubai, Aug 2016–Aug 2018; Aug 2019–2021

Taught across multiple subjects within the American curriculum with a focus on differentiated learning, English-as-an-Additional-Language instruction, and support for students with varied educational needs. Designed curriculum materials, administered and analyzed standardized assessments, and tailored instruction to promote individual student progress. Successfully prepared for and passed annual provincial school inspections evaluating teaching quality, curriculum alignment, and student achievement, and developed instructional action plans informed by assessment data.

ACADEMIC RESEARCH

Researcher, Linguistic Neurodiversity Lab

Carleton University, Sept 2021–present

Leading research on memory, dyslexia, and bilingual processing costs, with a focus on integrating behavioural, neuroimaging, and computational methods. Developing strong expertise in Bayesian modelling, GLMMs, multiple factor analysis, and partial least squares. Gaining hands-on training in neuroimaging methods, including fNIRS, EEG, and eye-tracking. Managing complex datasets, performing multi-stage data cleaning and preprocessing pipelines in R and SPSS. Presenting research at national and international conferences and contributing to multiple manuscripts in neuroimaging, behavioural, and experimental psychology.

Researcher, Cognition & Neuroscience of Aging Lab

Carleton University, Sept 2021–Aug 2022

Conducted research on cognitive reserve and aging, examining how bilingualism affects white-matter integrity and hearing-in-noise performance. Trained in MRI preprocessing workflows using FSL and MRtrix, including diffusion processing, tractography, and structural complexity metrics. Completed methods training in multivariate modelling (PLS, MFA, fractal dimensionality). Led a project on white-matter integrity in bilinguals using advanced multivariate analyses.

Researcher, Perception & Learning Lab

Lancaster University – Sept 2018–Sept 2019

Designed and conducted experimental studies on artificial language learning, linguistic relativity, theory of mind, and visuospatial working memory in humans and chimpanzees. Collaborated on second-language acquisition research with international academic partners. Managed full experimental pipelines from design to data analysis. Presented and published findings in peer-reviewed conference proceedings.

GOVERNMENT & APPLIED RESEARCH EXPERIENCE

Defence Scientist, Director General Military Personnel Research & Analysis

Department of National Defence, Oct 2023–Apr 2025; Sept 2025–April 2026

Led and co-authored research on CAF leadership, operational effectiveness, psychological safety, and member well-being using large-scale military datasets. Analyzed and synthesized complex quantitative survey data (e.g.,

Your Say Matters, Unit Morale & Climate Assessment) using SPSS Complex Samples. Delivered high-impact executive summaries and research decks to senior CAF leadership and defence stakeholders. Contributed to national and international work on military readiness, work-life conflict, sexual misconduct, and the NATO Brigade in Latvia. Authored government publications, internal scientific reports, and policy-briefing materials. Demonstrated strong quantitative, qualitative, and thematic analysis skills for strategic decision-making.

Researcher, Flight Research Laboratory

National Research Council of Canada, Sept 2023–Apr 2024

Contributed to research on how whole-body vibration affects pilots' in-flight tracking performance. Provided design input on cognitive task components and assisted with literature reviews on human factors, physiological load, and flight performance. Observed the use of OptiTrack motion-capture systems and gained familiarity with kinematic tracking methods. Collaborated with a multidisciplinary team of military pilots, engineers, and human-factors researchers to support the development of experimental protocols and research directions.

MENTORING & SUPERVISION

L-Neuro Lab, Carleton University, Sept 2025–Dec 2025

Supervising an MA student in the Linguistic Neurodiversity Lab, providing guidance on experimental procedures, participant testing, and research workflow. Training the student in fNIRS task setup, behavioural task execution, and data collection protocols for the ongoing dissertation project. Offering regular feedback on research skills, data handling, and lab practices to support their development as an independent researcher.

GUEST LECTURES**Brains and Trains: How a Railroad Worker Blew Our Mind (2025)**

Lifelong Learning Program (LEAP), Carleton University

A History of Neuroscience (2025)

Theories in Cognitive Science (CGSC 2001), Carleton University

The Disordered Mind and Brain (2023)

Theories in Cognitive Science (CGSC 2001), Carleton University

ACADEMIC SERVICE

Reviewer, Cognitive Science Cyclical Review Program, Carleton University (2022)

Organizer and Committee Member, Graduate Cognitive Science Conference (2021–2022)

Graduate Academic Student Representative, Lancaster University (2018–2019)

PUBLICATIONS AND PRESENTATIONS

Peer-Reviewed Journal Articles

Skomorovsky, A., **Charanek, N.**, Campbell, A. H., Reeves, K., & Norris, D. (2025). Well-being among Canadian Armed Forces men and women: Roles of work-life balance and organizational support. *Journal of Military, Veteran and Family Health*, 11(2), 152–167. <https://doi.org/10.3138/jmvfh-2024-0049>

Skomorovsky, A., Chamberland, J., & **Charanek, N.** (2025). Psychological health and safety in the Canadian Defence Team. *Journal of Military, Veteran and Family Health*, 11(2), 65–83. <https://doi.org/10.3138/jmvfh-2024-0043>

Peer-Reviewed Conference Proceedings

Charanek, N. (2020). *Visuospatial working memory of serial order in humans and chimpanzees: The possible influence of language on recall*. Papers from the Lancaster University Postgraduate Conference in Linguistics & Language Teaching, 63.

Manuscripts Under Review/ Submitted

Charanek, N., Hodgins, V., & Jouravlev, O. Slower but not always: Word properties and L2 experience in bilinguals' L1 naming. (*submitted*)

Manuscripts in Preparation

Baskar, A. K., **Charanek, N.**, Azin, T., & Jouravlev, O. Neuroimaging language with light: A scoping review of fNIRS studies in neurotypical adults. (*In preparation*)

Skomorovsky, A., **Charanek, N.** The roles of leadership perceptions and morale in CAF well-being. (*In preparation*)

CONFERENCE TALKS (*Presenter)

Charanek, N., Athanasopoulos, P., Rivard, R., & ***Jouravlev, O.** (2023). Visuospatial working memory of serial order in bilinguals, monolinguals, and chimpanzees. CSBBCS Annual Meeting, Guelph, Canada.

***Charanek, N.**, Athanasopoulos, P., & Jouravlev, O. (2023). Visuospatial working memory of serial order in bilinguals, monolinguals, and chimpanzees. Carleton Cognitive Science Graduate Conference.

***Charanek, N.**, Athanasopoulos, P., Rivard, R., & Jouravlev, O. (2022). Visuospatial working memory of serial order in bilinguals, monolinguals, and chimpanzees. Psychonomics 63rd Annual Meeting, Boston, USA.

***Charanek, N.**, Hodgins, V., & Jouravlev, O. (2022). Bilingual processing costs in production are restricted to non-cognate, high-frequency words. Mental Lexicon Conference, Canada.

*Charanek, N. (2020, October 16–18). Visuospatial Working Memory of Serial Order in Humans and Chimpanzees: A Possible Influence of Language on Recall. The Words in the World (WoW) International Conference, Canada.

*Charanek, N. (2019, June 2). Visuospatial Working Memory of Serial Order in Humans and Chimpanzees: A Possible Influence of Language on Recall. LAEL PG Conference, Lancaster, UK.

INVITED TALKS

Charanek, N. (2022). Visuospatial working memory of serial order in bilinguals, monolinguals, and chimpanzees. Department of Cognitive Science Colloquium Series, Carleton University.

PROFESSIONAL PRESENTATIONS

*Skomorovsky, A. & Charanek, N. (September 18, 2025). The roles of leadership perceptions and morale in the well-being of Canadian Armed Forces men and women. NATO in the NORDICS. Oslo, Norway.

POSTER PRESENTATIONS

*Charanek, N., *Smirnova-Godoy, I., Jouravlev, O., Madan, C., & Anderson, J. A. (2023). Language Experience Impacts Fractal Dimensionality in the Bilingual Brain: A Multivariate Approach. Carleton Cognitive Science Graduate Conference.

*Charanek, N., Athanasopoulos, P., & Jouravlev, O. (2022). Visuospatial working memory of serial order in bilinguals, monolinguals, and chimpanzees: Who has the advantage? Carleton Cognitive Science Graduate Conference.

TECHNICAL SKILLS

Qualitative & Mixed-Methods Research

Experience conducting research with sensitive and diverse populations (CAF personnel, bilingual adults, aging participants)
Developing and administering participant strategy questionnaires and self-report measures
Performing thematic analysis for military, cognitive, and behavioural research projects
Conducting structured literature reviews across cognitive neuroscience, bilingualism, defence, and human factors
Integrating qualitative insights with behavioural, neuroimaging, and quantitative findings

Quantitative, Statistical & Computational Modelling

Bayesian multilevel modelling (brms), GLMMs, and zero-one inflated beta models
Multivariate and high-dimensional methods: PLS, MFA, fractal dimensionality, white-matter complexity metrics

Large-scale defence data analysis (Your Say Matters; Unit Morale & Climate Assessment) using SPSS
Complex Samples
Developing full data-processing pipelines, including cleaning, integration, QC, and reproducibility in R
Presenting quantitative results to both technical and non-technical audiences, including senior CAF leadership

Neuroimaging, Behavioural & Physiological Methods

Training in fNIRS acquisition, trigger integration, preprocessing, and hemodynamic analysis workflows
Exposure to EEG acquisition and preprocessing using Aurora and Homer software packages
Completed formal methods training on preprocessing existing MRI datasets using FSL and MRtrix, including diffusion workflows and structural metrics such as tractography and fractal dimensionality
Professional training in physiological measurement data acquisition and experimental design (eye-tracking: fixations, saccades, pupilometry)
Integrating multimodal behavioural and neuroimaging datasets for cognitive neuroscience research

Experimental Design, Testing & Data Management

Designing experimental tasks in PsychoPy, E-Prime, and Experiment Builder
Designing and deploying extensive surveys using Qualtrics
Launching and managing online studies via Pavlovia and Prolific, including debugging and timing verification
Recruiting participants, managing scheduling, tracking attrition, and overseeing data collection logistics
Developing standardized procedures for testing protocol, participant flow, data validation, and secure data storage
Implementing ethics protocols and secure handling of sensitive data in both academic and defence settings

REFERENCES

Dr. Olessia Jouravlev, Supervisor, PI in Cognitive Neuroscience of Language at Linguistic Neurodiversity Lab, Carleton University, Email: ollessiajouravlev@cunet.carleton.ca Tel: +1-613-520-2600 ext. 4148
Dr. John Anderson, PI in Cognitive Neuroscience of Aging at CANAL Lab, Carleton University, Email: johnanderson3@cunet.carleton.ca Tel: +1-613-520-2600
Dr. Morgan Rooney, Educational Development Coordinator, Carleton University, Email: morgan.rooney@carleton.ca
Dr. Alla Skomorovsky, Section Head, Department of National Defence, Canada, Email: alla.skomorovsky@forces.gc.ca