VALERIA KEBETS

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ABOUT

Neuroscientist with expertise in developing neuroimaging-based biomarkers for psychiatric and neurodegenerative diseases

EXPERIENCE

Postdoctoral Research Fellow

McGill University

2021 – Present | Montreal, Canada

- Advisor: Prof. Boris C. Bernhardt
- Used **multimodal neuroimaging** data acquired with structural, functional magnetic resonance imaging to identify early predictors of mental illness in a large-scale dataset (N>10,000) with **unsupervised machine learning**
- Produced original scientific articles and reviewed articles for publication
- Applied for, awarded, and managed original research grants
- Supervised and **mentored** students (2 undergraduate students, 1 medical school student)

Postdoctoral Research Fellow

National University of Singapore

2017 – 2020 | Singapore

- Advisor: Prof. B.T. Thomas Yeo
- Processed and used neuroimaging data acquired with functional magnetic resonance imaging to identify **shared disease markers** across psychiatric disorders with unsupervised machine learning
- Produced original scientific articles and reviewed articles for publication
- Taught a **course on unsupervised approaches** in psychiatric neuroimaging at the Organization for Human Brain Mapping Annual Meeting (Singapore 2018, Virtual 2020)
- Co-developed a MATLAB-based **open source toolbox: myPLS**

PhD Candidate

University of Geneva

2012 – 2016 | Geneva, Switzerland

- Collected clinical data and brain images acquired with structural and functional magnetic resonance in elderly individuals at risk for Alzheimer's disease
- Processed and used neuroimaging data to predict progression to Alzheimer's disease using supervised machine learning models (e.g., support vector machine, random forest)
- Applied for, awarded, and managed original research grants

EDUCATION

Ph.D. in Neuroscience

University of Geneva

2012 – 2016 | Geneva, Switzerland

- Advisors: Prof. Dimitri Van De Ville and Prof. Frédéric Assal
- Thesis: Functional imaging markers of the MCI brain in task and at rest: detecting memory and connectivity impairments in prodromal Alzheimer's disease
- Keywords: neuroimaging, machine learning, prediction, biomarker development

M.Sc. in Clinical Neuroscience

University College London

2009 – 2010 | London, United Kingdom

- Advisor: Prof. David J. Werring
- Thesis: Neuroimaging correlates of vascular cognitive impairment: prevalence and functional significance of mesial temporal lobe atrophy
- Keywords: neuroimaging, stroke, cognition, radiological marker

B.Sc. in Psychology

University of Geneva

2006 – 2009 | Geneva, Switzerland

SKILLS

MATLAB | R | Python | Jupyter | Bash | Git/Github | Unix/Linux | LaTeX

machine learning | big data | neuroimaging | MRI | fMRI | scientific research | scientific writing | scientific software development | data mining | data visualization

LANGUAGES

French ●●●●●

English ●●●●●

Russian ●●●○○

SELECTED HONORS AND AWARDS

2013-2020 - Speaker at international conferences (SfN; Organization for Human Brain Mapping Annual Meeting; Whistler Workshop on Brain Functional Organization, Connectivity and Behavior; International Workshop on Pattern Recognition in Neuroimaging)

2012-2022 - Travel awards from the Quebec Bio-Imaging Network, Swiss National Science Foundation, Jean-Falk Vairant Foundation, and Lemanic Neuroscience Doctoral School to attend international conferences

2022 - Jeanne Timmins Costello Fellowship from the Montreal Neurological Institute (**40'000 CAD**) for the project *"A multi-modal and dimensional approach to study typical and atypical neurodevelopment"*

2021 - Finalist for Somerfeld-Ziskind Research Award, which recognizes outstanding research investigations in biological psychiatry

2021 - Quebec Autism Research Training Fellowship from the Transforming Autism Care Consortium (**40'000 CAD**) for the project *"Neurodevelopmental subtypes informed by hierarchical brain network features"*

2016 - Project grant from the Boninchi Foundation (**75'000 CHF**) for the project *"A multimodal marker to predict the progression to Alzheimer's disease"*

2015 - Scholarship (**10'000 CHF**) from the Association Suisse des Femmes Diplômées des Universités

2013 - Travel Mobility Grant (**11'600 CHF**) from the Swiss National Science Foundation to visit the Functional Imaging in Neuropsychiatric Disorders Lab, Stanford University, Stanford, CA, USA (6 months)

PUBLICATIONS

1. Park B, **Kebets V**, et al. Multilevel neural gradients reflect transdiagnostic effects of major psychiatric conditions on cortical morphology. *Communications Biology (Accepted).*

2. Chen J*, Tam A*, **Kebets V**, et al. Shared and unique brain network features predict cognitive, personality, and mental health scores in the ABCD study. *Nature Communications (2022), 13, 2217.*

3. Benkarim O, Paquola C, Park B, **Kebets V**, et al. Population heterogeneity in clinical cohorts affects the predictive accuracy of brain imaging. *PLOS Biology (2022), 20(4), e3001627.*

4. Tomescu MI, Papasteri CC, Sofonea A, Boldasu R, **Kebets V**, et al. Spontaneous thought and microstate activity modulation by social imitation. *Neuroimage (2022), 118878.*

5. **Kebets V**, et al. Fronto-limbic neural variability as a transdiagnostic correlate of emotion dysregulation. *Translational Psychiatry (2021), 11, 545.*

6. Siffredi V, Preti MG, **Kebets V**, et al. Structural neuroplastic responses preserve functional connectivity and neurobehavioral outcomes through strengthening of intra-hemispheric pathways in children born without a corpus callosum. *Cerebral Cortex (2021), 31(2), 1227-39.*

7. Shi M*, Freitas LGA*, Spencer-Smith MM, **Kebets V**, et al. Intra- and inter-hemispheric structural connectome in agenesis of the corpus callosum. *Neuroimage: Clinical (2021), 31, 102709.*

8. Bolton TAW, **Kebets V**, et al. Agito ergo sum: Correlates of spatio-temporal motion characteristics during fMRI. *Neuroimage (2020), 209, 116433.*

9. **Kebets V**, et al. Somatosensory-motor dysconnectivity spans multiple transdiagnostic dimensions of psychopathology. *Biological Psychiatry (2019), 86, 779-91.*

10. **Kebets V**, et al. Multivariate and predictive modelling of neural variability in mild cognitive impairment. *8th International Workshop on Pattern Recognition in Neuroimaging (2018).*

11. **Kebets V***, Wegrzyk J*, et al. Identifying motor functional neurological disorder using resting-state functional connectivity. *Neuroimage: Clinical (2018), 17, 163-8.*

12. Van Assche M, **Kebets V**, et al. Functional dissociations within posterior parietal cortex during scene integration and viewpoint changes. *Cerebral Cortex (2016), 26(2), 586-98.*

13. Van Assche M, **Kebets V**, et al. Hurt but still alive: residual activity in the parahippocampal cortex conditions the recognition of familiar places in a patient with topographic agnosia. *Neuroimage: Clinical (2016), 11, 73-80.*

14. **Kebets V**, et al. Predicting pure amnestic mild cognitive impairment conversion to Alzheimer's disease using joint modeling of imaging and clinical data. *5th International Workshop on Pattern Recognition in Neuroimaging (2015).*

15. **Kebets V***, Gregoire SM*, Charidimou A*, et al. Prevalence and cognitive impact of medial temporal atrophy in a hospital stroke service: retrospective cohort study. *International Journal of Stroke (2015), 10(6), 861-7.*

16. Hurtz S, Woo E, **Kebets V**, et al. Age effects on cortical thickness in cognitively normal elderly individuals. *Dementia and Geriatric Cognitive Disorders Extra (2014), 4(2), 221-7.*

* Authors contributed equally