

# VALERIA KEBETS

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valkebets

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## ABOUT

After 10 years in academia working on developing tools and applying sophisticated analytical approaches to identify biological markers that contribute to disease, I am now looking to apply my expertise toward translating research into solutions that lead to optimal life outcomes.

## EXPERIENCE

### Postdoctoral Research Fellow

#### McGill University

2021 – Present Montreal, Canada

- Advisor: Prof. Boris C. Bernhardt
- Processed and modeled multi-modal neuroimaging data to identify early predictors of mental illness in large-scale dataset (N>10,000) with unsupervised machine learning
- Published 5 peer-reviewed articles
- Mentored 3 students

### Postdoctoral Research Fellow

#### National University of Singapore

2017 – 2020 Singapore

- Advisor: Prof. B.T. Thomas Yeo
- Processed and modeled neuroimaging data to identify shared disease markers across psychiatric disorders with unsupervised machine learning
- Taught a course on unsupervised machine learning at the Organization for Human Brain Mapping Annual Meeting
- Co-organized a neuroscience conference and a hackathon with >200 attendees
- Co-developed an open source toolbox for unsupervised learning
- Published 4 peer-reviewed articles (2 first-authored)

### PhD Candidate

#### University of Geneva

2012 – 2016 Geneva, Switzerland

- Processed and modeled neuroimaging data for early diagnosis of Alzheimer's disease using supervised machine learning
- Collected clinical and MRI data in >100 elderly individuals at risk for Alzheimer's disease
- Published 5 peer-reviewed articles (2 first-authored)

## CERTIFICATIONS

- Deep Learning Specialization (Coursera)

## 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

Python scikit-learn TensorFlow PyTorch  
R Bash MATLAB Git/Github

machine learning deep learning big data  
multi-modal MRI scientific research  
scientific software development data processing  
data mining data visualization

## LANGUAGES

French ● ● ● ● ●

English ● ● ● ● ●

Russian ● ● ● ● ●

# SELECTED HONORS AND AWARDS

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-  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

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1. Park B, **Kebets V**, et al. Multiscale neural gradients reflect transdiagnostic effects of major psychiatric conditions on cortical morphology. *Communications Biology* (2022), 5(1), 1-14.
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 amnesic 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.