Thomas (Tom) Bochynek, Ph.D., Dipl.-Biol.

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Education

Ph.D., Information Technology 09/2013 - 03/2017
Monash University *Melbourne, Australia*
Thesis on self-organised infrastructure construction in leaf-cutter ants
Combination of experimental and theoretical work; behavioural and evolutionary simulation

Dipl.Biol. (~B.Sc. + M.Sc.), Behavioural Ecology 07/2004 - 10/2011
Ruhr-Universität Bochum - highest grade "sehr gut" *Bochum, Germany*
Thesis on collective nest-construction in weaver ants
Statistical analysis of experiments and visualisation of ant clustering

Work Experience

Research Assistant, SensiLab, *Monash University* 06/2015 - 03/2017
Design of models and AI of palaeontological lifeforms for Augmented Reality teaching app

Research Assistant, Machine Learning Group, *Monash University* 06/2015 - 09/2016
Annotation of medical records for automated data extraction

Research Assistant, Behavioural Ecology Group, *James Cook University* 03/2011 - 11/2011
Collection and statistical analysis of behavioural data on weaver ant nest construction; lab management

Teaching Experience

Teaching Associate, School of Biological Sciences, *Monash University* 07/2014 - 10/2014
Teaching and grading second year biology course

Teaching Associate, Behavioural Biology Group, *Ruhr-Universität Bochum* 08/2009 - 02/2010
Design and teaching of undergraduate course "Behavioural Ecology"

Publications

Please visit Google Scholar for current list.

1. **Bochynek, T.**, Tanner, J., Meyer, B., and Burd, M. (*in press*) – Parallel foraging cycles for different resources in leaf-cutting ants: a clue to the mechanisms of rhythmic activity. Ecological Entomology

2. **Bochynek, T.**, Meyer, B., and Burd, M. (2017) – Energetics of trail clearing in the leaf-cutter ant *Atta*. Behavioral Ecology and Sociobiology

3. **Bochynek, T.** and Robson, S. K. A. (2014) – Physical and Biological Determinants of Collective Behavioural Dynamics in Complex Systems: Pulling Chain Formation in the Nest-Weaving Ant *Oecophylla smaragdina*. PLOS ONE

4. Shmanina, T., Zukerman, I., Cheam, A. L., **Bochynek, T.**, Cavedon, L (2016) – Corpus of Tables in Full-Text Biomedical Research Publications. Conference on Computational Linguistics 2016

5. Ihlow, F., Rödder, D., **Bochynek, T.**, Sothanin, S., Handschuh, M., Böhme, W. (2014) – Reinforcement as a conservation toolassessing site fidelity and movement of the endangered elongated tortoise *Indotestudo elongata* (Blyth, 1854). Journal of Natural History

Conference Presentations

Mechanism and regulation of self-organised infrastructure construction	ECCS 2016
(Invited) Regulatory mechanism in leaf-cutter ant foraging	ECCS 2016
Concurrent foraging patterns in leaf-cutter ants *Atta*	ASSAB 2016
Costs and benefits of clearing physical trails in leaf-cutter ants *Atta*	Behaviour 2015
Dynamics of collective worksite selection in weaver ants, *Oecophylla smaragdina*	IUSSI 2014

Acronyms: ECCS = European Conference on Complexity Systems, ASSAB = Australian Society for the Study of Animal Behaviour, IUSSI = International Union for the Study of Social Insects

Awards & Scholarships

Monash University Postgraduate Publication Award (AUD ~4500)	2016
Faculty of IT Supplementary Funding Award, used for research visit (AUD 5000)	2016
Best Student Presentation award at ASSAB 2016 conference (signed textbook)	2016
Three Minute Thesis competition faculty round winner (AUD 500)	2015
"Highly commended" poster at Monash IT Innovation Showcase	2015
Two national and one state price at GovHack Hackathon (Team effort, AUD 1500)	2015
Monash International Postgrad Research Scholarship (AUD ~27,000 p.a., for 3.5 years)	2013
CSIRO Data61 / NICTA Top-up Scholarship (AUD ~7000 p.a., for 3.5 years)	2013
Monash University Faculty Scholarship (covers fees of AUD ~37,000 p.a., for 3.5 years)	2013

Total funds: AUD ~260,000

Skills

Programming languages: Python, Mathematica, LaTeX

Computational skills: Agent-based and system modeling in Python and Mathematica; computer vision using OpenCV; evolutionary computing using Artificial Neural Networks; Evolutionary Game Theory simulation; Cellular Automata

Experimental skills: Laboratory and field experiment design and execution; field work experience on 4 continents

Other proficiencies: Git, Linux, Adobe Acrobat Suite, OpenOffice & MS Office Suite, GIS

Visited Institutions

Prof. Simon Robson, James Cook University, Australia	2017
Dr. Ana Duarte, Exeter University, UK	2016
Prof. Christoph Kleineidam, Konstanz University, Germany	2014
Smithsonian Tropical Research Institute, Panama	2013
Prof. Simon Robson, James Cook University, Australia	2010-2011
Danum Valley Field Centre (for Ant Course), Sabah, Malaysia	2010
Panay Eco-Social Conservation Project, Philippines	2009

Professional Activities

Reviewer for PLOS ONE (2x), Journal of Insect Behaviour (declined due to lack of time)

Initiator, organiser, and moderator of 2-day Monash IT Research Retreat. Event received ~AUD 70,000 in faculty funds. Led a team of 10 PhD students for 8 months, organising guest-speakers and research workshops. Event brought together PhD students from 3 Monash campuses (including from Malaysia)

Student Representative to the IT Graduate Research Committee. Aided in shaping faculty policies

Supervisor of ~15 biology undergraduate student volunteers aiding in data extraction, over duration of 1.5 years

Four-time speaker at Monash PhD Student Induction Day; Presenter at Monash Univeristy Open Days and Innovation Showcases; Presenter at NICTA Tech Showcase

Student Representative on Monash University academic conduct committees

Other Passions

Fishing, camping, hiking, snorkelling & diving, photography, travelling, drawing & painting, carving & crafts, ethical lock-picking; book worm and e-book aficionado, avid tea sampler.