

# Dr Laszlo Talas

camolab.com/members/talas | l.talas@bristol.ac.uk | +44 117 394 1649  
Bristol Veterinary School, Langford | Bristol, UK | BS40 5DU

---

## Education

- **PhD. Biological Sciences** 10/2011–12/2015  
*School of Biological Sciences* *University of Bristol, UK*
    - Thesis: *Cultural evolution of military camouflage*.
    - Combined methods from computer vision and evolutionary biology to quantify textures and colours of 600+ military uniform patterns around the world in order to examine how historical events (e.g. conflicts, alliances) influenced camouflage design.
  - **BSc. Psychology and Zoology** 09/2008–06/2011  
*School of Experimental Psychology* *University of Bristol, UK*
    - Final Grade: Second Class (2:1) with Honours, thesis: Gloss perception in the large earth bumblebee (*Bombus terrestris*).
- 

## Employment

- **EPSRC Innovation Fellow** 06/2018–  
*Bristol Veterinary School* *University of Bristol, UK*
    - Develop automatic disease detection and monitoring in domestic cattle calves to mitigate anti-microbial resistance.
    - Using deep learning, coupled with multi-sensory inputs, to identify Bovine Respiratory Disease at pre-clinical stages.
    - Built farm-based and handheld sensory units with visible-range and thermal cameras.
  - **Research Associate** 09/2015–06/2018  
*School of Experimental Psychology* *University of Bristol, UK*
    - Project *Camouflage Machine* combined deep learning techniques and visual psychophysics to either optimise camouflage or maximise visibility for any given environment.
    - Designed experiments, collected data, and implemented deep networks to successfully predict reaction time to unseen camouflage patterns.
    - Research was covered on the BBC1 documentary *Animals Behaving Badly*.
- 

## Active collaborations

- Understand the influence of style and semantic content on the aesthetic preference of paintings using deep networks combined with neuroscientific approaches (with Dr Jasmina Stevanov, Royal Holloway, University of London).
- 

## Grants and awards

- NVIDIA GPU Grant Program. Evolving animal camouflage using Generative Adversarial Networks to simulate antagonistic evolutionary pressures in nature. (\$1,500) with J. Fennell.

- BBSRC Responsive Mode Research Grant. Concealing 3D objects. (£728,000) with I. Cuthill, R. Baddeley, N. Scott-Samuel and J. Fennell.
- EPSRC UKRI Innovation Fellowship. Automatic disease detection in calves. (£610,000) with J. Fennell.
- EPSRC Exploratory Impact Award. Early automatic detection of Bovine Respiratory Disease. (£14,000) with D. Barrett and J. Fennell.
- Bristol Alumni Foundation travel grant to International Society for Behavioural Ecology 2014 conference in New York, USA. (£500).
- APCV Student Award Committee travel grant to Asian-Pacific Conference on Vision 2014 in Takamatsu, Japan. (100,000 JPY).
- SPIRITS travel grant to visit Kyoto University, Japan. (100,000 JPY).

---

## Languages and technologies

**Programming languages:** Matlab, R, Python, Fortran, PHP, HTML,  $\text{\LaTeX}$

**Technologies:** Image Processing Toolbox, Psychtoolbox, Keras, TensorFlow, Shiny

**Natural languages:** Fluent in Hungarian and English, intermediate in German, basic in French

---

## Professional roles

- **Symposium Organiser**, 'Computational approaches to animal camouflage' at Behaviour 2017, Estoril, Portugal
  - **Postdoctoral Representative** (2016–Present) at Bristol Vision Institute
  - **Symposium Organiser**, 'Camouflage: new insights from interdisciplinary collaborations' at ISBE 2014, New York, USA
  - **Freelance Web Developer** (2013–Present)
  - **Postgraduate Representative** (2011–2016) at Bristol Vision Institute, University of Bristol
  - **Postgraduate Representative** (2011–2014) at School of Biological Sciences, University of Bristol
  - **Undergraduate Representative** (2008–2011) at School of Experimental Psychology, University of Bristol
- 

## Publications

1. **Talas, L.**, Fennell, J.G., Kjernsmo, K., Cuthill, I.C., Scott-Samuel, N.E & Baddeley, R.J. (2018). Evolving optimum camouflage with Generative Adversarial Networks. *bioRxiv*, 429092.
2. Fennell, J.G, **Talas, L.**, Baddeley, R.J., Cuthill, I.C. & Scott-Samuel, N.E. (2018). Optimising colour for camouflage and visibility: the effects of the environment and the observer's visual system. *bioRxiv*, 428193.
3. Cuthill, I.C., Allen, W.L., Arbuckle, K., Caspers, B., Chaplin, G., Hauber, M.E., Hill, G.E., Jablonski, N.G., Jiggins, C.D., Kelber, A., Mappes, J., Marshall, J., Merrill, R., Osorio, D., Prum, R., Roberts, N., Roulin, A., Rowland, H., Sherratt, T.N., Skelhorn, J. Speed, M.P., Stevens, M., Stoddard, M.C., Stuart-Fox, D., **Talas, L.**, Tibbetts, E. & Caro, T. (2017). The biology of color. *Science*, 357, eaan0221.
4. **Talas, L.**, Baddely R.J. & Cuthill, I.C. (2017). Cultural evolution of military camouflage. *Philosophical Transactions of the Royal Society B*, 372, 20160351.
5. Talas, L. & **Talas, L.** (2017). Infrared thermography as an imaging diagnostics tool for equine medicine. *Hungarian Veterinary Journal*, 139, 259-268.

---

## Talks

- Central European University, Budapest, Hungary, Jan 2018: The cultural evolution of camouflage uniform patterns: visual concealment as foreign policy?
- Cultural Evolution Society conference, Jena, Germany, Sep 2017: Visual concealment as foreign policy: the cultural evolution of camouflage uniform patterns.
- Behaviour conference, Estoril, Portugal, Aug 2017: Optimising camouflage against mammalian vision.
- Advances in camouflage science and engineering meeting, London, UK, Mar 2016: Recognisable deception: Potential functions of camouflage uniforms beyond concealment.
- Winter meeting of the Vision Society of Japan, Tokyo, Japan, Jan 2015: The paradox of camouflage: how can concealment help recognition?
- International Society of Behavioural Ecology conference, New York, USA, Aug 2014: feathers, tiger stripes, paintbrushes and pixels: what biologists can learn from human camouflage?