# Curriculum Vitae of Tamás Zsedrovits

## Date and place of birth:

30 January 1986. Dunaújváros, Hungary

## Contact data:

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## Current position:

PhD student at Faculty of Information Technology and Bionics,  
Pázmány Péter Catholic University, Budapest, Hungary.

## Education:

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| Informatics Specialist in Bionic Computing, Pázmány Péter Catholic University, *Title of the thesis:* „Visual Collision Avoidance System for Unmanned Aerial Vehicles” | 2011 |
| MSc degree in Information Technology, Pázmány Péter Catholic University,  *Title of the thesis:* Investigation of foetal heart sounds recorded with phonocardiography in order to determine the acoustic properties and their deviation | 2009 |
| Internship at Hungarian Academy of Sciences, Computer and Automation Research Institute *Research topic:* Realization of the model of a specific “looming detector” cell from mouse retina on Bii system | 2007 |
| Graduation in Benedictine Grammar School of Pannonhalma | 2004 |

## International studies:

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| Visitor researcher at Environmental Fluid Mechanics Group, Department of Civil and Environmental Engineering and Earth Sciences, University of Notre Dame *Research topic:* Detection and analysis of flow features via decomposition techniques in the MATERHORN project; Data acquisition and processing from an autonomous Unmanned Aerial Vehicle, which is being developed at the Environmental Fluid Mechanics group | 2014 |
| Visitor researcher at Environmental Fluid Mechanics Group, Department of Civil and Environmental Engineering and Earth Sciences, University of Notre Dame *Research topic:* Detection and analysis of flow features via decomposition techniques in the MATERHORN project | 2013 |

## Awards:

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| Jedlik Ányos Doctoral Candidate Fellowship: Fellowship for national excellences of Hungary | 2013-2014 |
| 1st place at the TDK Conference, Faculty of Information Technology and  Bionics, Pázmany Péter Catholic University | 2008 |
| Faculty of Information Technology and Bionics, Pázmany Péter Catholic  University: Distinguished Faculty Fellowship. | 2007, 2008, 2009 |

## Educational experience:

Introduction to Circuit Theory

Introduction to Database Systems

## Publications:

### The author's journal publications

1. T. Zsedrovits, A. Zarandy, B. Vanek, T. Peni, J. Bokor, and T. Roska, “Estimation of Relative Direction Angle of Distant, Approaching Airplane in Sense-and-Avoid,” *J. Intell. Robot. Syst.*, vol. 69, no. 1–4, pp. 407–415, Jan. 2013.
2. A. Zarandy, Z. Nagy, B. Vanek, and T. Zsedrovits, “A five-camera vision system for UAV visual attitude calculation and collision warning,” *Comput. Vis. Syst. Lect. Notes Comput. Sci.*, vol. 7963, pp. 11–20, 2013.
3. A. Zarandy, M. Nemeth, Z. Nagy, A. Kiss, L. Santha, and T. Zsedrovits, “A real-time multi-camera vision system for UAV collision warning and navigation,” *J. Real-Time Image Process.*, Sep. 2014.

### The author's international conference publications

1. B. Vanek, T. Peni, J. Bokor, T. Zsedrovits, A. Zarandy, and T. Roska, “Performance analysis of a vision only Sense and Avoid system for small UAVs,” Presented at the *AIAA Guidance, Navigation, and Control Conference*, Reston, Virigina, 2011.
2. T. Zsedrovits, A. Zarandy, B. Vanek, T. Peni, J. Bokor, and T. Roska, “Collision avoidance for UAV using visual detection,” in *Proc. of* *2011 IEEE Int. Sym. of Circuits and Systems (ISCAS)*, 2011, pp. 2173–2176.
3. T. Zsedrovits, A. Zarandy, B. Vanek, T. Peni, J. Bokor, and T. Roska, “Visual Detection and Implementation Aspects of a UAV See and Avoid System,” in *Proc. of* *2011 20th European Conference on Circuit Theory and Design (ECCTD)*, 2011, pp. 472–475.
4. B. Vanek, T. Péni, Á. Zarándy, J. Bokor, T. Zsedrovits, and T. Roska, “Performance Characteristics of a Complete Vision Only Sense and Avoid System,” Presented at the *AIAA Guidance,* Navigation*, and Control Conference*, 2012.
5. Z. Nagy, A. Kiss, A. Zarandy, T. Zsedrovits, B. Vanek, T. Peni, J. Bokor, and T. Roska, “Volume and power optimized high-performance system for UAV collision avoidance,” in *Proc. of the 2012 IEEE Int. Symp. on Circuits and Systems*, 2012, pp. 189–192.
6. T. Zsedrovits, A. Zarandy, B. Vanek, T. Peni, J. Bokor, and T. Roska, “Estimation of Relative Direction Angle of Distant, Colliding Airplane in Sense-and-avoid and Tracking,” Presented at the *International Conference on Unmanned Aircraft Systems*, Philadelphia, Pennsylvania, 2012.
7. T. Zsedrovits, A. Zarandy, B. Vanek, T. Peni, J. Bokor, and T. Roska, “Azimuth estimation of distant, approaching airplane in See-and-avoid Systems,” in *Proc. of* *2012 13th International Workshop on Cellular Nanoscale Networks and their Applications*, Turin, Italy, 2012, pp. 1–6.
8. A. Zarandy, T. Zsedrovits, Z. Nagy, A. Kiss, and T. Roska, “Visual sense-and-avoid system for UAVs,” in *Proc. of 2012 13th International Workshop on Cellular Nanoscale Networks and their Applications*, 2012, pp. 1–5.
9. A. Zarandy, T. Zsedrovits, Z. Nagy, A. Kiss, P. Szolgay, and T. Roska, “Cellular processor array based UAV safety system,” in *Proc. of 2012 13th International Workshop on Cellular Nanoscale Networks and their Applications*, 2012, pp. 1–2.
10. T. Zsedrovits, P. Bauer, A. Zarandy, B. Vanek, J. Bokor, and T. Roska, “Towards Real-Time Visual and IMU Data Fusion,” Presented at the *AIAA Guidance, Navigation, and Control Conference*, Reston, Virginia, 2014.
11. T. Zsedrovits, P. Bauer, A. Zarandy, B. Vanek, J. Bokor, and T. Roska, “Error Analysis of Algorithms for Camera Rotation Calculation in GPS/IMU/Camera Fusion for UAV Sense and Avoid Systems,” Presented at the *International Conference on Unmanned Aircraft Systems*, Orlando, Florida, 2014.