
CONTACT INFORMATION	Digimarc 9405 SW Gemini Drive Beaverton OR 97008 USA	Mobile: +1-503-545-1556 E-mail: vojtech_holub@yahoo.com WWW: dde.binghamton.edu/vholub
QUALIFICATIONS AND INTERESTS	Digital watermarking, machine learning, pattern recognition, steganography and steganalysis of digital images, image processing, camera fingerprinting, wavelet compression.	
EDUCATION	Binghamton University, State University of New York , Binghamton, NY Ph.D., Department of Electrical and Computer Engineering, May 2014 <ul style="list-style-type: none">• Dissertation: Content adaptive steganography - design and detection• Adviser: Professor Jessica Fridrich, Ph.D.• Area of Study: Steganography, steganalysis, machine learning, information theory, signal detection Faculty of Nuclear Sciences and Physical Engineering, the Czech Technical University in Prague , Prague, Czech Republic M.S., Software engineering, Department of Mathematics, June 2010 <ul style="list-style-type: none">• Thesis: Creating University Timetable Using a Genetic Algorithm• Adviser: Professor Milan Krbalek, Ph.D.• Area of Study: Theoretical informatics, image processing, mathematical statistics, information theory, graph theory B.S., Applied Informatics, Department of Mathematics, June 2007 <ul style="list-style-type: none">• Thesis: A software for creation and management of the univeristy timetable• Adviser: Professor Milan Krbalek, Ph.D.• Area of Study: Calculus, linear algebra, physics	
PROFESSIONAL EXPERIENCE	Digimarc Corporation , Beaverton, OR, USA <u>Senior Research & Development Engineer</u> from July 2014 <ul style="list-style-type: none">• Reporting to: Ravi Sharma, Ph.D.• Research in digital watermarking – embedding, detection and application of machine learning methods. <u>Research & Development trainee</u> June 2013 to November 2013 <ul style="list-style-type: none">• Supervisor: Dr. Adnan Alattar• Researching methods of speeding up detection of digital audio and digital image watermarks. SCIO , Prague, Czech Republic <u>ASP.NET web application developer</u> February 2009 to June 2010 <ul style="list-style-type: none">• Supervisor: M.S. Zdenek Chadima• Project management and implementation of smaller-scale web applications.• Responsibility for all development phases – analysis, database design, business layer and presentation layer.• Projects: e-learning (all education levels), education web portal• Used Technology: MS SQL Server 2008, C#, ASP.NET, HTML	

AWARDS

- The Best Student Paper Award – ACM Workshop on Information Hiding and Multimedia Security, Montpellier, France, 2013.
- Outstanding PhD Researcher 2013-2014 – The Department of Electrical and Computer Engineering, Binghamton University.

JOURNAL
PUBLICATIONS

- [1] Low Complexity Features for JPEG Steganalysis Using Undecimated DCT, V. Holub and J. Fridrich. *IEEE Transactions on Information Forensics and Security*, vol. 10, no. 2, pp. 219–228, February 2015.
- [2] Universal Distortion Function for Steganography in an Arbitrary Domain, V. Holub, J. Fridrich and T. Denemark. *EURASIP Journal on Information Security*, (Section: SI: Revised Selected Papers of ACM IH and MMS 2013), 2014(1)
- [3] Random Projections of Residuals for Digital Image Steganalysis, V. Holub and J. Fridrich. *IEEE Transactions on Information Forensics and Security*, vol. 8, no. 12, pp. 1996–2006, December 2013
- [4] Ensemble Classifiers for Steganalysis of Digital Media, J. Kodovský, J. Fridrich and V. Holub. *IEEE Transactions on Information Forensics and Security*, vol. 7, no. 2, pp. 432–444, April 2012

CONFERENCE
PUBLICATIONS

- [5] Phase-Aware Projection Model for Steganalysis of JPEG Images, V. Holub and J. Fridrich, *SPIE, Electronic Imaging, Media Watermarking, Security, and Forensics*, vol. 9409, San Francisco, CA, February 8-12, 2015.
- [6] Selection-Channel-Aware Rich Model for Steganalysis of Digital Images, T. Denemark, V. Sedighi, V. Holub, R. Cogranne and J. Fridrich, *IEEE Workshop on Information Forensic and Security*, Atlanta, GA, December 3-5, 2014.
- [7] Feature-Based Watermark Localization in Digital Capture Systems, V. Holub and T. Filler, *SPIE, Electronic Imaging, Media Watermarking, Security, and Forensics*, vol. 9028, San Francisco, CA, February 2-6, 2014.
- [8] Challenging the Doctrines of JPEG Steganography, V. Holub and J. Fridrich, *SPIE, Electronic Imaging, Media Watermarking, Security, and Forensics*, vol. 9028, San Francisco, CA, February 2-6, 2014.
- [9] Further study on security of S-UNIWARD, T. Denemark, J. Fridrich and V. Holub, *SPIE, Electronic Imaging, Media Watermarking, Security, and Forensics*, vol. 9028, San Francisco, CA, February 2-6, 2014.
- [10] Digital Image Steganography Using Universal Distortion, V. Holub and J. Fridrich, *ACM Workshop on Information Hiding and Multimedia Security*, Montpellier, France, June 17-19, 2013.
- [11] Random projections of residuals as an alternative to co-occurrences in steganalysis, V. Holub, J. Fridrich and T. Denemark, *SPIE, Electronic Imaging, Media Watermarking, Security, and Forensics*, vol. 8665, San Francisco, CA, February 3-7, 2013.
- [12] Designing Steganographic Distortion Using Directional Filters, V. Holub and J. Fridrich, *IEEE Workshop on Information Forensic and Security*, Tenerife, Canary Islands, December 2-5 2012.
- [13] Optimizing Pixel Predictors for Steganalysis, V. Holub and J. Fridrich, *Proc. SPIE, Electronic Imaging, Media Watermarking, Security, and Forensics*, pages 09 1-13, San Francisco, CA, January 22-26, 2012.

- [14] On Dangers of Overtraining Steganography to Incomplete Cover Model, J. Kodovský, J. Fridrich and V. Holub, Proc. ACM Multimedia and Security Workshop, Niagara Falls, NY, pages 69-76, September 29-30, 2011.
- [15] Steganalysis of Content-Adaptive Steganography in Spatial Domain, J. Fridrich, J. Kodovský, V. Holub and M. Goljan, Proc. of the 13th Information Hiding Conference, Prague, Czech Republic, May 18-20, 2011, LNCS vol. 6958, Springer-Verlag, pp. 102-117.
- [16] Breaking HUGO – the process discovery, J. Fridrich, J. Kodovský, V. Holub and M. Goljan, Proc. of the 13th Information Hiding Conference, Prague, Czech Republic, May 18-20, 2011, LNCS vol. 6958, Springer-Verlag, pp. 85-101.

PROGRAMMING SKILLS C, C++, C#, Matlab, SQL, T-SQL, ASP.NET, LaTeX, UNIX shell, HTML