

# Brief CV: March 2017

## A General

**Full name** Dimitar Lubomirov Kazakov  
**Department** Computer Science, York, UK  
**Present position** Senior Lecturer in Machine Learning (since Oct 2009)  
**WWW home page** <http://www-users.cs.york.ac.uk/~kazakov>  
**Google Scholar** <http://tinyurl.com/google-scholar-dimitar-kazakov>

### Previous posts

**March – Dec 1998** Research Associate, CS Dept., University of York. Project: Esprit 20237 *Inductive Logic Programming II (ILP2)*. Principal investigator: Prof. Stephen Muggleton.

**Jan – Sept 1999** Research Associate, CS Dept., University of York. Project: Esprit 28623 *Applied Logic for Advanced Data mining In iNdustry (ALADIN)*. Principal investigator: Prof. Stephen Muggleton.

**Oct 1999 – Sept 2009** Lecturer, CS Dept., University of York.

### Qualifications

**1993** M.Sc. (“Engineer” degree) in Technical Cybernetics from the Czech Technical University of Prague. Master’s thesis: *Natural Language Interface Module*. Supervisors: Assoc. Prof. Olga Štěpánková, Dr Marta Vávrová.

**2000** Ph.D. in Artificial Intelligence and Biocybernetics from the Czech Technical University of Prague. Ph.D. thesis: *Natural Language Processing Applications of Machine Learning*. Supervisor: Prof. Olga Štěpánková.

**2001** York Certificate of Academic Practice (YCAP).

## B Research and Scholarship

### Selected Journal Publications

N. Lavrač, D. Županič, I. Weber, D. Kazakov, O. Štěpánková, and S. Džeroski. ILPNET repositories on WWW: Inductive Logic Programming Systems, Datasets and Bibliography. *AI Communications*, **9**(4), 1996.

D. Kazakov and S. Manandhar. Unsupervised learning of word segmentation rules with genetic algorithms and inductive logic programming. *Machine Learning*, **43**:121–162, 2001.

H. Turner and D. Kazakov. Stochastic Simulation of Inherited Kinship-Driven Altruism. *Journal of Artificial Intelligence and Simulation of Behaviour*, **1**(2):183–196, 2002.

D. Kazakov and S. Dobnik. Inductive Learning of Lexical Semantics with Typed Unification Grammars. *Oxford Working Papers in Linguistics, Philology, and Phonetics*. Oxford University, 2003.

D. Kazakov and M. Bartlett. Co-operative navigation and the faculty of language. *Applied Artificial Intelligence*, 18:885–901, 2004.

M. Bartlett and D. Kazakov. The Origins of Syntax: from Navigation to Language. *Connection Science* **17**(3–4):271–288, 2005.

R. Alfred, E. Paskaleva, D. Kazakov and M. Bartlett. Hierarchical Agglomerative Clustering for Cross-Language Information Retrieval. *International Journal of Translation* **19**(1), 2007.

M. Bartlett, I. Bate and D. Kazakov. Accurate Determination of Loop Iterations for Worst-Case Execution Time Analysis. *IEEE Transactions on Computers*, 59(11):1520-1532, 2010.

D. Kazakov. The Self-Cognisant Robot. *Cognitive Computation* **4**(3), Sept 2012.

D. Kazakov and M. Bartlett. Evolutionary Pressures Promoting Complexity in Navigation and Communication. *Interaction Studies*, **14**(1):107–135. John Benjamins, 2013.

M. Butler and D. Kazakov. SAX Discretization Does Not Guarantee Equiprobable Symbols. *IEEE Transactions on Knowledge and Data Engineering*, **27**(4):1162-1166, 2015.

## Selected Conference Publications

D. Kazakov. Unsupervised learning of naïve morphology with genetic algorithms. In W. Daelemans, A. van den Bosch, and A. Weijters, editors, *Workshop Notes of the ECML/MLnet Workshop on Empirical Learning of Natural Language Processing Tasks*, pages 105–112, Prague, April 1997.

D. Kazakov. Combining LAPIS and WordNet for the learning of LR parsers with optimal semantic constraints. In Sašo Džeroski and Peter Flach, editors, *The Ninth International Workshop ILP-99*, Bled, Slovenia, 1999. Springer-Verlag.

D. Kazakov and M. Bartlett. *A Multi-Agent Simulation of the Evolution of Language*. In Marko Grobelnik, Marko Bohanec, Dunja Mladenic and Matjaz Gams (eds): The Proc. of Information Society Conference IS'2002, p.39–41, Ljubljana, Slovenia, Josef Stefan Institute, October 2002. ISBN 961-6303-41-4.

D. Kazakov and M. Bartlett. *Social Learning through Evolution of Language*. In the Proceedings of the 6th International Conference on Artificial Evolution (EA'03), Université de Provence, France, 27–30 October 2003.

D. Kazakov and M. Bartlett. *Could Navigation Be the Key to Language?* In the Proc. of the Second Symposium on the Emergence and Evolution of Linguistic Communication (EELC'05), pp. 50–55. 12–15 April 2005, Hatfield UK. Published by AISB, ISBN: 1 902956 40 9.

M. Bartlett and D. Kazakov. *The evolution of syntactic capacity from navigational ability*. The Sixth Intl. Conference on the Evolution of Language (EvoLang 2006), pp 393–394, Rome, 12-15 April 2006.

D. Kazakov. *Simulating the Benefits of Language*. Conf. on Ways to Protolanguage: the initial stages of the evolution of the language faculty, Torun, Poland, 2009.

D. Kazakov. *Interplay between Language, Navigation and Kin Selection*. The Eighth Conference on the Evolution of Language (EvoLang), Utrecht, the Netherlands, April 2010.

A.R. Shahid and D. Kazakov. *Using parallel corpora for word sense disambiguation*. RANLP-13, Hissar, Bulgaria, 2013.

D. Kazakov and M. Bartlett. *Evolutionary paths to compositional language*. In Proc. of Evolang X. Vienna, Austria, 2014.

Z. Georgiev and D. Kazakov. Learning Ordinary Differential Equations for Macroeconomic Modelling. IEEE Symposium on Computational Intelligence for Financial Engineering & Economics (CIFEr), Cape Town, 2015.

H. Qu, M. Sardelich, N. N. Qomariyah and D. Kazakov. *Integrating Time Series with Social Media Data in an Ontology for the Modelling of Extreme Financial Events*. Joint Second Workshop on Language and Ontology & Terminology and Knowledge Structures. Portorož, Slovenia, 2016.

H. Qu and D. Kazakov. *Quantifying Correlation between Financial News and Stocks*. IEEE Symposium on Computational Intelligence for Financial Engineering and Economics (CIFEr), Athens, 2016.

**Editorial duties:** LNAI Springer, vol. 2636 (2003) and 3394 (2005), Guest Editor for a special journal issue: (co-editors: E. Ridge, E. Curry, D. Kudenko). *Multi-Agent and Grid Systems (MAGS) Journal*, Special Issue on Nature-Inspired Systems for Parallel, Asynchronous and Decentralised Environments. 2007.

## Journal Reviewer

J. of Logic, Language and Information (JoLLI), Connection Science, Intl J. of Approx. Reasoning, JNLE, Neuroscience.

## Conference Chair

Annual Convention of the UK Society for the Study of Artificial Intelligence and Simulation of Behaviour (AISB 2011), 2011, York, UK.

## Research Funding

### Revision of Natural Language Grammars and Domain Theories using Inductive Logic Programming

PI since July 2001 in an EPSRC ROPA research grant. Duration: Jan 2001 – Sep 2002. Budget: £95,000.

### Document Clustering for Cochrane Group Reviewing Support

PI in a Capacity Building Grant for Knowledge Transfer to Industry White Rose Research Triangle (HEIF). Duration: Dec 2005 – April 2007. Budget: £39,740.

### Bulgarian IST Centre of Competence in the 21<sup>st</sup> Century (BIS-21++)

A named partner on this EU project (FP6-2004-ACC-SSA-2).

### Using Learning to Support the Development of Embedded Systems

EPSRC, CoI. 2007-2011 (42 months), £362,000.

### e-Platform for Islamic Retail Banking

PI, Early Stage Commercialisation Projects, University of York, Feb-Aug 2014, £19,200.

## Research Students

**Completed PhDs:** Mark Bartlett (2006), Heather Turner (co-sup., 2007), Enda Ridge (co-sup., 2007), Rayner Alfred (2008), Ahmad Shahid (2011), Matthew Butler (2012), Amer Alzaidi (2014).

**Current PhD students:** Haizhou Qu (submitted), N. Nurul Qomariyah (2014–), Marcelo Sardelich (2014–), Hani Elgabou (2015–), Mudita Sharma (2016–), Noof Alfear (2017–).

## Graduate Examiner

Served on 4 occasions as internal PhD examiner at York since 2005.

Served on 3 occasions as external PhD examiner (Bristol, Plymouth, Brunel) since 2011.

## Visiting Research Posts

**May—July 1994** Graduate research at II Università di Roma Tor Vergata. Supervisor: Prof. M.T.Pazienza.

**Sept 1995—Feb 1996** Graduate research at Ecole Nationale Supérieure des Télécommunications – Paris. Supervisor: Dr Martin Rajman.

**July—Dec 2002** Visiting researcher at the Josef Stefan Institute, Ljubljana.

## C Teaching and the Promotion of Learning

The aspects of my teaching include admission interviews, lecturing, small group tutorials, supervision of final year undergraduate (UG) and Master's projects, as well as having PhD students. In addition, I take part in outreach events, both in and outside the university, from numerous graduate summer schools, all the way down to sessions for primary schools. In the course of the last eighteen years, I have taught eight different modules. I have also taken part in one national and one international network to exchange best practice in teaching, and inform it from research.

### C1 Teaching undertaken

Principles of Programming (Y1/UG)

Implementation of Programming Languages (Y2/UG)

Lexical and Syntax Analysis (Y2/UG)

Principles of Programming Languages (Y2/UG)

Introduction to Artificial Intelligence (Y2/UG)

Logic Programming and Artificial Intelligence (Y2/UG)

Symbolic Learning of Natural Language (Y3/UG)

Adaptive and Learning Agents (Y4/UG, MEng, MSc)

Individual Project Supervision (Y3/UG, Y4/MEng, MSc)

First Year Tutorials (Y1/UG)

## C2 Wider involvement in the community

### TEACHING AND LEARNING COLLABORATIONS

**1. Disciplinary Commons in Computing Education:** Oct 2005–June 2006. UK-wide HEA project, coordinator: Sally Fincher (Kent) (NTFS Fellow). <http://www.cs.kent.ac.uk/people/staff/saf/dc/portfolios.html>

Participants: James Bown (Abertay Dundee), Mark Ratcliffe (Aberystwyth), Pete Bibby (Bolton), Michael Jones (Bournemouth), Thomas Lancaster (Central England), Stephan Jamieson (Durham), Quintin Cutts (Glasgow), Vicky Bush (Gloucestershire), David Barnes (Kent), Tony Jenkins (Leeds), Dermot Shinnors-Kennedy (Limerick), Phil Campbell (London South Bank), Monika Seisenberger (Swansea), Chris Whyley (Swansea), Linda White (Sunderland), and Dimitar Kazakov (York).

**2. Testing Programming Aptitude:** 2006–07. Coordinator: Saeed Dehnadi (Middlesex).

Partners: Stuart Wray, Royal School of Signals in Blandford (associated institution of Bournemouth University); Steve Easterbrook, University of Toronto; Dave Donnellan, School of Computing in DCU, Dublin; Charlie Daly, School of Computing in DCU, Dublin; Lee Mark and Barney Dalgarno, Charles Stuart University, NSW, Australia; Sunam Pradhan, University of Ballarat, Victoria, Australia; Aidan Delaney, University of Brighton; Keith Lander, Department of Science Teaching, The Weizmann Institute of Science, Israel; Kathleen Weaver, Dallas Independent School District, Dallas, Texas; Dimitar Kazakov, University of York, UK.

### TEACHING BEYOND THE INSTITUTION

#### Graduate tutorials and Summer schools

##### July 2001

Dimitar Kazakov and Daniel Kudenko. Machine Learning and Inductive Logic Programming for Multi-Agent Systems. An invited 1/2 day lecture at The Third European Agent Systems Summer School in Prague (part of ACAI-01), URL: <http://www-users.cs.york.ac.uk/~kazakov/papers/acai01.htm>.

##### July 2002

ECAI Summer School 1/2 day tutorial on Machine Learning for Agents and Multi-Agent Systems (in Lyon, jointly with D. Kudenko.)

##### July 2004

ESSLLI Summer School 1-week Tutorial on Symbolic Learning of Natural Language (in Nancy, jointly with James Cussens). A reader is available through the ESSLLI 2004 Web site: <http://esslli2004.loria.fr/giveabs.php?6>. (See entry on the SLL module in Section C1.(ii) for students' feedback.)

##### Sept 2006

Spatial Cognition 2006 1/2 day tutorial on Navigation, Cooperation and Language (Bremen). <http://www.cs.york.ac.uk/~kazakov/SpatialCognition-06/NavCoopLangTut.html>

##### Sept 2007

Recent Advances in Natural Language Processing (RANLP): Invited graduate-level tutorial on Information Retrieval (Borovets, Bulgaria), <http://lml.bas.bg/ranlp2007/tutorials.htm#IR>.

## C3 Teaching bids, awards, and other distinctions

Recipient of the **University of York Vice-Chancellor's 2007 Teaching Award**. This award recognises excellence in teaching, in particular: “*The selection panel commended in particular your thoughtful approach to assessment, and your engagement with the wider teaching community at a national level.*” The award was one of 11 granted in 2007.

## C4 Teaching-Related Publications

1. Sally Fincher, David Barnes, Peter Bibby, Jim Bown, Vicky Bush, Phil Campbell, Quintin Cutts, Stephan Jamieson, Tony Jenkins, Michael Jones, Dimitar Kazakov, Thomas Lancaster, Mark Ratcliffe, Monika Seisenberger, Dermot Shinner-Kennedy, Carole Wagstaff, Linda White, and Chris Whyley. *Some Good Ideas from the Disciplinary Commons*. The Higher Education Academy 7<sup>th</sup> Annual Conference. 29–31 August 2006, Trinity College, Dublin. <http://www.disciplinarycommons.org/some-good-ideas.doc>
2. Quintin Cutts, Sally Fincher, David Barnes, Peter Bibby, Jim Bown, Vicky Bush, Phil Campbell, Stephan Jamieson, Tony Jenkins, Michael Jones, Dimitar Kazakov, Thomas Lancaster, Mark Ratcliffe, Monika Seisenberger, Dermot Shinner-Kennedy, Carole Wagstaff, Linda White, and Chris Whyley. *Laboratory Exams in First Programming Courses*. The Higher Education Academy 7<sup>th</sup> Annual Conference. 29–31 August 2006, Trinity College, Dublin.
3. D. Kazakov. *Open Book Examinations in AI Teaching: A Case Study*. In the 2<sup>nd</sup> UK WS on AI in Education, Cambridge, 11 Dec 2006. <http://www.cs.york.ac.uk/~kazakov/papers/kazakov-ai-in-education-06.pdf>.
4. D. Kazakov. *Introduction to Programming Commons Portfolio*. June 2006, Disciplinary Commons in Computing Education. URL: <http://www.cs.kent.ac.uk/people/staff/saf/dc/portfolios/>.

## D Administration, Leadership and Management

In my eighteen years as a CS lecturer, I have held departmental administrative posts as (1) Project Allocation Coordinator, (2) Coordinator of Open Days and Admissions Interviews, (3) Admissions Interviewer, (4) Outreach Officer; (5) I developed a successful proposal for a new undergraduate programme, MEng in Computer Science with Artificial Intelligence, and also (6) initiated, and represented our university in the work on a proposal for a new, joint PhD degree between the University of York and IPN, Mexico City. In addition, I (7) chaired the remodularisation process of all departmental teaching related to Artificial Intelligence, (8) took part in the Departmental Energy Group, and (9) the University Science and Society Group, and, (10) acted as a committee member and Vice-Chair of a major UK learned society, SSAISB. I have also been (11) Chair of the Departmental Teaching Committee, and (12) external examiner for the taught undergraduate Computer Science programmes of the Universiti Malaysia Sabah in Kota Kinabalu, Malaysia, and the undergraduate CS programmes at the University of Birmingham.