

Dávid Csaba Mezőfi

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Curriculum vitæ

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Personal Data

Place of birth Baja, Hungary

Date of birth January 12, 1993

Education

September, 2016 – **PhD**, *Doctoral School of Mathematics and Computer Science*, University of Szeged.

Advisor: dr. Gábor Péter Nagy.

2014–2016 **MSc**, University of Szeged, *Grade: 5.00.*

Major: Applied Mathematics

2011–2014 **BSc**, University of Szeged, *Grade: 4.97.*

Major: Mathematics

2005–2011 **Matura**, *Béla III Grammar School*, Baja.

Master Thesis

Title *On The Error Correcting Rates of Random Linear Codes*

Advisor dr. Gábor Péter Nagy

Description The goal of the thesis is to find effective – economical and reliable – linear codes over a high noise binary channel.

Bachelor Thesis

Title *Transitive Binary Codes*

Advisor dr. Gábor Péter Nagy

Description The goal of the thesis is to find binary linear codes with a given automorphism group and minimal distance.

Languages

English B1

BME Language Certificate level B2

German C1

German Language Certificate (DSD) level C1

Publications

- July, 2019 **On the geometry of full points of abstract unitals**, *Designs, Codes and Cryptography*, joint work with Dr. Gábor Péter Nagy.
<https://link.springer.com/article/10.1007/s10623-019-00658-1>

Summer/Winter Schools

- June 17–21, 2019 **Finite Geometry & Friends**, *Vrije Universiteit Brussel*, Brussels, Belgium.
Substructures of finite projective spaces, covering and linear sets, subspace codes, eigenvalues of graphs and their applications.
- January 21–27, 2018 **Winter School on Applied Algebra and Coding Theory**, *Universität Würzburg*, Würzburg, Germany.
Shannon's capacity theorems for binary symmetric channels, complexity of decoding, McEliece cryptosystems, Delsarte's LP bounds for codes, rank-metric codes and their applications.
- July 23–29, 2017 **7th PhD Summer School in Discrete Mathematics**, Rogla, Slovenia.
Game theory, history of combinatorics.
- January 18–28, 2015 **Winter School in Applied Algebra and Discrete Mathematics**, *Universität Würzburg*, Würzburg, Germany.
Coding theory, cryptography, Gröbner-bases, combinatorial optimization, linear and semidefinite programming.
- June 17–27, 2013 **Finite Geometry and its Applications**, *Università della Basilicata*, Potenza, Italy.
Finite geometry, coding theory, cryptography.

Conference Talks

- January 31 – February 3, 2019 **On the set of full points of abstract unitals**, *Finite Geometry Workshop 2019*, Szeged.
Joint work with dr. Gábor Péter Nagy.
- June 3–9, 2018 **A note on the embedding of Hermitian unitals in projective planes**, *Combinatorics 2018*, Arco, Italy.
Joint work with dr. Gábor Péter Nagy.
- June 27–29, 2016 **Random linear codes over high noise binary channel**, *The 4th Conference of PhD Students in Mathematics*, Szeged.
Joint work with dr. Gábor Péter Nagy.
- April 4–8, 2016 **Comparison of some linear codes with high noise binary channel**, *Network Coding and Designs*, Dubrovnik.
Joint work with Regina Judák and dr. Gábor Péter Nagy.

Posters

- October 6, 2017 **Classification of abstract unitals by computation methods**, *Szeged Geometry Day 2017*, Szeged.

Awards, Grants, Scholarships

- September, 2017 – New National Excellence Program *Grant for PhD students*
January, 2018
- July, 2016 Excellent Student of the Faculty of Science and Informatics, University of Szeged
- 2015–2016 Grant of the Republic of Hungary
- 2014–2015 Grant of the Republic of Hungary
- 2014 Campus Hungary Scholarship *Short Term Study Program (Würzburg)*
- 2013–2014 Grant of the Republic of Hungary
- 2013 Campus Hungary Scholarship *Short Term Study Program (Potenza)*

Projects

- November, 2018 – **SETIT**, *Security Enhancing Technologies for the Internet of Things*.
http://www.eit.bme.hu/calls_and_projects/2018-121-nkp-2018-00004
- February, 2018 **LRS4GAP**, *GAP package*, GLRS and GLPK interface for linear programming in GAP.
<https://github.com/davidmezofi/LRS4GAP>
- October, 2017 **UnitalSZ**, *GAP package*, Algorithms and libraries of unitals of projective planes.
<https://github.com/davidmezofi/UnitalSZ>

Other Activities

- September, 2017 – PhD Representative at the Bolyai Institute, University of Szeged
- September, 2016 – Deputy PhD Representative at the Bolyai Institute, University of Szeged
September, 2017
- 2014–2015 Secretary of the *Mathematics Workshop*, Loránd Eötvös College for Advanced Studies

February 24, 2020