# RAFAL URBANIAK

rfl.urbaniak@gmail.com • rfl-urbaniak.github.io • linkedin.com/in/rfl-urbaniak

## EDUCATION

2012

2011-2012

2008 PhD in Logic & Philosophy of Mathematics, University of Calgary

Selected research grants & Awards

2022 Bednarowski Trust Fellow, University of Edinburgh

Research project: Explicating normic support

2021 Kosciuszko Foundation Fellow, Northeastern University, Boston

Research project: Epistemological challenges to imprecise probabilism

2017-2021 Principal Investigator in a National Science Center project, University of Gdansk

Research project: Conceptual, formal and practical aspects of forensic and judicial applications of probabilistic tools

Trinity College Long Room Hub Visiting Fellow, Trinity College Dublin Research project: Mathematical existence, abstraction principles and real number theory

Visiting Fellow, Benares Hindu University, Varanasi

Research project: Knowability paradox and Nyaya logic

2009 British Academy Visiting Fellow, Bristol University

Research project: Modal reconstructions of mathematical theories

# Positions held

2012-2019 Postdoctoral Fellow of Research Foundation Flanders

2008- Associate Professor, University of Gdansk (with academic leaves)

2005-2008 TA, research assistant, instructor of record, University of Calgary

# SELECTED DATA SCIENCE PROJECTS

• Legal Probabilism bayesian networks in R

R implementation of **bayesian network methods** for criminal evidence evaluation, based on our work with Marcello Di Bello on the Legal Probabilism entry in the Stanford Encyclopedia of Philosophy

· Short-term impact of personal attacks on Reddit user activity

In cooperation with Samurai Labs, we tracked 148,317 users and identified personal attacks among 182,528 posts and comments using their high precision software. I analyzed the data from three perspectives: (i) classical statistical methods, (ii) Bayesian estimation, and (iii) model-theoretic analysis with hurdle and zero-inflated models. They agree: personal attacks decrease the victims' activity. Results published in Computers in

Bayesian estimation of multi-class bias in word2vec embeddings

We propose Markov chain Monte Carlo methods to supersede cosine-distance-based bias measures such as WEAT and argue that the resulting picture is not as clear as it initially might have seemed.

• Probabilistic coherence measures over bayesian networks

Algorithms for calculating main existing coherence measures over bayesian networks, with a new method essentially relying on the causal structure, implemented in R, building on bnlearn, with application to multiple counterexamples to earlier proposals.

• MC in backtesting of optimized trading strategies

Implementation in R of Monte Carlo methods for gauging uncertainty in algorithmic trading strategy evaluation. Illustrates how correcting for multiple testing in optimization can undermine claims to significance.

# Key skills

## R tasks and tools

- Bayesian statistics
   STAN LACS BUCS mathinking rises.
  - ${\sf STAN, JAGS, BUGS, rethinking, rjags, runjags, BESTmcmc}$
- Bayesian networks bnlearn, gRain
- Discrete data models countreg, vcd, vcdExtra, car, MASS
- Time series, dynamic regression, algotrading xts, quantmod, tidyquant, TTR, fpp3
- Data wrangling and visualization tidyverse, ggplot2, ggpubr

#### other

- Python
- SQL
- Reproducible research
   R markdown, LaTeX, beamer, Shiny
- Datacamp: 24 courses completed 130,102xp, 1,536 exercises aced

# ACADEMIC ACTIVITIES

- Multiple university courses taught related to probability, statistical programming and inference e.g.: statistical methods in criminology; probability & philosophy of juridical evidence evaluation; uncertainty and R programming; interpretations of probability; decisions, games, and social choice theory; cognitive failures; meta-arithmetic; formal theories of truth; ontology of mathematics,
- 3 books and ca. 30 research papers in top academic journals

e.g.: Stanford Encyclopedia of Philosophy; Computers in Human Behavior; Aggressive Behavior; Review of Symbolic Logic; Law, Probability & Risk; The International Journal of Evidence & Proof, Journal of Applied Logics, Artificial Intelligence and Law

30 invited lectures

e.g.: University of Oxford, Paris I Panthéon-Sorbonne, University of Edinburgh, Kyoto University, Keio University, Nagoya University, University of Turin

- 13 major research grants and awards, 15 international conferences organized, referee for 18 journals
- Research group coordinator of LoPSE research group (4-7 researchers) since 2013

- SELECTED JOURNAL PAPERS 2022 Rafal Urbaniak, Michał Ptaszyński, Patrycja Tempska, Gniewosz Leliwa, Maciej Brochocki, and Michał Wroczyński. Personal attacks decrease user activity in social networking platforms. Computers in Human Behavior, 126, January 2022. [DOI: 10.1016/j.chb.2021.106972] 2021 Rafal Urbaniak and Pawel Pawlowski. Informal provability, first-order BAT logic and first steps towards a formal theory of informal provability. Logic and Logical Philosophy, 2021. [accepted and forthcoming] Michał Bilewicz, Patrycja Tempska, Gniewosz Leliwa, Maria Dowgiałło, Michalina Tańska, Rafał Urbaniak, and Michał Wroczyński. Artificial intelligence against hate: Intervention reducing verbal aggression in the social network environment. Aggressive Behavior, January 2021. [DOI: 10.1002/ab.21948] Rafal Urbaniak and Marcello Di Bello. Legal Probabilism. In Edward N. Zalta, editor, The Stanford Encyclopedia of Philosophy. Metaphysics Research Lab, Stanford University, Fall 2021 edition, 2021 Rafal Urbaniak and Michał Tomasz Godziszewski. Modal quantifiers, potential infinity, and Yablo sequences. Review of Symbolic Logic, 2021. [accepted and forthcoming] 2020 Rafal Urbaniak, Alicja Kowalewska, Pavel Janda, and Patryk Dziurosz-Serafinowicz. Decision-theoretic and risk-based approaches to naked statistical evidence: some consequences and challenges. Law, Probability and Risk, 02 2020 2019 Rafal Urbaniak and Pavel Janda. Probabilistic models of legal corroboration. The International Journal of Evidence & Proof, pages 1–23, 2019. [DOI 10.1177/1365712719864608] Rafal Urbaniak. Probabilistic legal decision standards still fail. Journal of Applied Logics, 6(5), August 2018 Rafal Urbaniak. Narration in judiciary fact-finding: a probabilistic explication. Artificial Intelligence and Law, pages 1–32, 2018. [DOI: 10.1007/s10506-018-9219-z] Małgorzata Stefaniak and Rafal Urbaniak. Varieties of legal probabilism: a survey. Decyzje, 30:33-52, 2018 Rafal Urbaniak and Pawel Pawlowski. Many-valued logic of informal provability: a non-deterministic strategy. Review of Symbolic Logic, 2018. [DOI: 10.1017/S1755020317000363] 2017 R. Urbaniak. Different arguments, same problems. Modal ambiguity and tricky substitutions. European Journal of Analytic Philosophy, 13(2):5-22, 2017 2016 Rafal Urbaniak and Bert Leuridan. Challenging Lewis's challenge to the best system account of lawhood. Synthese, pages 1–18, 2016. [DOI: 10.1007/s11229-016-1287-6] Rafal Urbaniak. Potential infinity, abstraction principles and arithmetic (Leśniewski style). Axioms, 5(2):18, 2016 2015 Rafal Urbaniak. Stanisław Leśniewski: Re-thinking the philosophy of mathematics. European Review, 23:125–138, 2015 2014 Rafal Urbaniak and Paweł Siniło. The inapplicability of (selected) paraconsistent logics. Journal of Applied Non-Classical Logics, 24(4):368-383, 2014 Rafal Urbaniak. Słupecki's generalized mereology and its flaws. History and Philosophy of Logic, pages 1-12, 2014. [D0I: 10.1080/01445340.2014.917837] 2013 Cezary Cieśliński and Rafal Urbaniak. Gödelizing the Yablo sequence. Journal of Philosophical Logic, 42(5):679-695, 2013. [DOI: 10.1007/s10992-012-9244-4] 2012 Rafal Urbaniak. Numbers and propositions versus nominalists: yellow cards for Salmon & Soames. Erkenntnis, 77(3):381-397, 2012 Rafal Urbaniak. "Platonic" thought experiments: how on earth? Synthese, 187(2):731-752, 2012 Rafal Urbaniak and K. Severi Hämäri. Busting a myth about Leśniewski and definitions. History and Philosophy of Logic, 33(2):159-189, 2012
- Rafal Urbaniak. How not to use the Church-Turing thesis against platonism. Philosophia Mathematica, 2011
- (III)19:74-89, 2011. [DOI:10.1093/philmat/nkr001]
- 2010 Rafal Urbaniak. Neologicist nominalism. Studia Logica, 96:151-175, 2010 Rafal Urbaniak and Agnieszka Rostalska. Swinburne's modal argument for the existence of the soul. Philo, 12:73-98, 2010
  - Rafal Urbaniak. Capturing dynamic conceptual frames. Logic Journal of IGPL, 18(3):430-455, 2010
- 2009 Rafal Urbaniak. Leitgeb, "about", Yablo. Logique & Analyse, 207:239-254, 2009

7:48–55, 2009	
Rafal Urbaniak. Leśniewski and Russell's paradox: some problems. <i>History and Philosophy of 2</i> 29(2):115–146, 2008	.ogic,
Rafal Urbaniak. Reducing sets to modalities. In Reduction and Elimination. Proceedings of the 31st Winstein Symposium, pages 359–361, 2008	tgen-
2007 Rafal Urbaniak. Time travel and conditional logics. In Michal Peliš, editor, <i>Logica 2007 Yearbook</i> , 247–255, 2007	oages
2006 Rafał Urbaniak. On representing sentential connectives of Leśniewski's Elementary Protothetic. <i>Jo of Logic and Computation</i> , 16(4):451–460, 2006	urnal
Rafał Urbaniak. Some non-standard interpretations of the axiomatic basis of Lesniewski's Ontology <i>Australasian Journal of Logic</i> , 4:13–46, 2006	The
Rafał Urbaniak. On Ontological functors of Leśniewski's elementary Ontology. Reports on Mathem Logic, 40:15-43, 2006	itical
Books published	
Rafal Urbaniak and Gillman Payette, editors. <i>Applications of Formal Philosophy. The Road Less Travelli</i> Springer, 2017	ed.
Rafal Urbaniak. Slightly irresponsible and biased introduction to analytic philosophy [in Polish].  Academicon, 2016	
Rafal Urbaniak. Leśniewski's systems of logic and foundations of mathematics. Springer, 2013	
Other selected publications	
Rafal Urbaniak. Neologicism for real(s) - are we there yet? In Mirosław Szatkowski and Bartło Skowron, editors, <i>Contemporary Polish Ontology</i> . De Gruyter, 2019. (accepted and forthcoming)	omiej
Michał Tomasz Godziszewski and Rafal Urbaniak. Infinite liar in a (modal) finitistic setting. In <i>Logi Its Applications</i> , pages 18–29. Springer Berlin Heidelberg, 2019	c and
Rafal Urbaniak and Diderik Batens. Induction. In Sven Ove Hansson, Vincent F. Hendrick, and Kje Esther Michelsen, editors, <i>Introduction to Formal Philosophy</i> , pages 105–130. Springer, 2018	dahl
Rafal Urbaniak and Pawel Pawlowski. Logics of (formal and informal) provability. In Sven Ove Han Vincent F. Hendrick, and Kjeldahl Esther Michelsen, editors, <i>Introduction to Formal Philosophy</i> , pages 240. Springer, 2018	
Rafal Urbaniak and Michał Tomasz Godziszewski. Material implication and conversational implication in Lvov-Warsaw School. In Ángel Garrido and Urszula Wybraniec-Skardowska, editors, <i>The Lvov-Waschool. Past and Present</i> , pages 117–132. Springer International Publishing, 2018	
Rafal Urbaniak. Reconciling Bayesian epistemology and narration-based approaches to judiciary finding. In Jérôme Lang, editor, Proceedings Sixteenth Conference on <i>Theoretical Aspects of Rationalit Knowledge</i> , Liverpool, UK, 24-26 July 2017, volume 251 of <i>Electronic Proceedings in Theoretical Com Science</i> , pages 504–514. Open Publishing Association, 2017	y and
Rafal Urbaniak. Beating the gatecrasher paradox with judiciary narratives. In Alexandru Baltag, Je Seligman, and Tomoyuki Yamada, editors, Logic, Rationality, and Interaction: 6th International Work LORI 2017, Sapporo, Japan, September 11-14, 2017, Proceedings, pages 637–642. Springer, 2017	-
2011 Rafal Urbaniak and Agnieszka Rostalska. A modern modal argument for the soul. In Michael Bruck Steven Barbone, editors, <i>Just the arguments</i> , pages 93–99. Wiley-Blackwell, 2011	and

#### SELECTED TALKS

# Invited and departmental talks

2021 Story coherence with Bayesian Networks with Alicja Kowalewska, invited webinar at Center for Logic, Language, and Cognition University of Turin, Italy Story coherence with Bayesian Networks, invited graduate class taught with Alicja Kowalewska at Arizona State University, USA Potential Infinity, Leśniewskian Definitions, Arithmetic & Yablo sequences, Logic, Language, and Ontology -2018 WaragaiFest 2018, Tokyo, Japan Modal Quantifiers, Potential Infinity, and Yablo sequences, Proof Society Summer School 2018, Ghent University, Belgium 2017 Narrations in judiciary fact-finding and the difficulty about conjunction, Faculty of Philosophy, University of Groningen, Netherlands Paradoxes of informal provability and many-valued indeterministic provability logic, Kyoto Philosophical Logic Workshop III, Kyoto University, Japan Narration in Judiciary Fact-Finding: A Probabilistic Explication, Tokyo Forum for Analytic Philosophy, The University of Tokyo, Japan Non-deterministic logic(s) of (informal) provability, University of Oxford (United Kingdom), University of 2015 Oslo (Norway) A non-classical logic of informal provability (with Pawel Pawlowski), Munich Center for Mathematical Philosophy, Germany Non-deterministic logics of provability, ∃ntia et Nomin∀ 2015, Cracov, Poland Workshop on probabilistic logic, Metafizz Student Club, Trinity College Dublin, Ireland 2013 Mereology and mathematics. The case of Leśniewski and his continuators, Parts in Logic and Metaphysics, Université de Rennes I, France Stanisław Leśniewski: Re-thinking the philosophy of mathematics, Academia Europaea 25th anniversary congress, Wrocław, Poland 2012 Gödelizing the Yablo sequence, Trinity College Dublin, Ireland Neologicism: for real(s), Numbers and Truth, University of Gothenburg, Sweden Abstraction without abstracta, Polish Philosophical Congress, Wisła, Poland The philosophical usefulness of paradoxes, Banaras Hindu University, Varanasi, India Busting a myth about Leśniewski and definitions, Warsaw University, Poland 2010 Frames, similarity, many-valuedness, Workshop on Types and Frames, Heinrich-Heine Universität, Düsseldorf, Germany Yellow Card for Salmon, Oxford University, United Kingdom Swinburne's modal argument for the existence of the soul (with Agnieszka Rostalska), Canterbury University, Christchurch, New Zealand 2009 Modalities+Identities-Entities, Structure and Identity and Abstraction Workshop, Bristol University, United Kingdom Galileo on falling bodies, Platonism, Dynamic Reasoning, Université Paris I Panthéon-Sorbonne, France Nominalist Neologicism, University of St. Andrews, Scotland Abstraction without Abstracta, Trinity College Dublin, Ireland Modality and Existence, keynote address, Polish Society for Logic and Philosophy of Science annual meeting, Warsaw University, Poland Logic and Religion: a case study, Bristol University, United Kingdom Nameability and Mathematical Existence, Logic & Language Seminar, University of Edinburgh, Scotland 2008 (1) What sentences refer to and (2) Quantified propositional modal logic and philosophy (with Agnieszka Rostalska), University of Edinburgh, Scotland 2006 Demonstratives in Logica Magna, Workshop on Medieval Nominalism, University of Quebec, Montreal, 2005 On ontological functors of Leśniewski's Ontology, Polish Association for Logic and Philosophy of Science (award reception), Warsaw University, Poland

#### Conference & workshop presentations

- 2020 (1) Story coherence with Bayesian Networks with Alicja Kowalewska, and (2) Imprecise Credences Can Increase Accuracy wrt. Claims about Expected Frequencies, Bayesian Epistemology: Perspectives and Challenges, LMU, Munich, Germany 2019 (1) Modal Quantifiers, Potential Infinity, and Yablo sequences with Michał Tomasz Godziszewski, and (2) Combining truth values with provability values: a non-deterministic logic of informal provability with Pawel Pawlowski, International Congress of Logic, Methodology and Philosophy of Science and Technology, Prague, Czech Republic 2018 Infinite liar in a (Modal) Finitistic Setting, 8th Indian Conference on Logic and its Applications, ICLA 2019, Delhi, India (1) Abstraction Principles via Leśniewskian definitions. Potential infinity and arithmetic and (2) Narrations in judiciary fact-finding and the difficulty about conjunction, Unilog 2018, Vichy, France 2017 Reconciling Bayesian epistemology and narration-based approaches to judiciary fact-finding, Sixteenth conference on Theoretical Aspects of Rationality and Knowledge 2017, University of Liverpool, United Kingdom Beating the Gatecrasher Paradox with Judiciary Narratives, Logic, Rationality, and Interaction 2017: 6th International Workshop, Sapporo University, Japan Probabilistic Explication of the Notion of Narration as Used in Judiciary Contexts, Progic 2017: The 8th workshop on Combining Probability and Logic, Munich, Germany Probabilistic explication of the notion of narration as used in judiciary contexts, ∃ntia et Nomin∀ 2017, Palolem, India 2016 Understanding conditionals, Hokudai-Ghent Joint Symposium Connecting Japan and Belgium, Ghent, Bel-Failxplication of truth (untyped), Language and metalanguage, logic and meta-logic. Revisiting Tarski's hierarchy, Louvain-la-Neuve, Belgium Probabilistic explication of the notion of narration as used in judiciary contexts, Justification of court decisions: law-theoretic and interdisciplinary perspectives, Jabłonna, Poland Not too abstract abstraction principles for real numbers, Polish Ontology Nowadays, Warsaw, Poland 2015 The non-applicability of selected paraconsistent logics, 15th Congress of Logic, Methodology and Philosophy of Science, Helsinki, Finland First steps towards non-classical logic of informal provability (with Pawel Pawlowski), 15th Congress of Logic, Methodology and Philosophy of Science, Helsinki, Finland 2014 Verbality and Disagreement in the Nyaya-Samkhya debate about causality, Udaharanas, Drstantas and Nyayas in Texts and Contexts, Gujarat University, Ahmendabad, India Irrational bookies, Third Reasoning Club Conference, University of Kent, United Kingdom A comparative study of selected filtered paraconsistent logics, 5th World Congress on Paraconsistency, Kolkata, India 2012 Gödelizing the Yablo sequence, Trends in Logic XI - Advances in Philosophical Logic, Ruhr-Universität Bochum, Germany 2011 Haecceitas and possible worlds, Philosophical perspectives on individuals, University of Gdańsk, Poland (1) Busting a myth about Leśniewski and definitions and (2) Platonic thought experiments? How on earth?, 14th Congress of Logic, Methodology and Philosophy of Science, Nancy, France (1) Proving unprovability by de-paradoxizing paradoxes and (2) Dynamic modeling of "platonic" thought experiments, ∃ntia et Nomin∀ 2011 Workshop, University of Gdańsk, Poland A semantical approach to Yablo sentences, Seventh Barcelona Workshop on Issues in the Theory of Reference, University of Barcelona, Spain How not to use the Church-Turing thesis against platonism, Trends in Logic IX – Studia Logica International Conference, Church's Thesis: Logic, Mind and Nature, Jagiellonian University, Cracow, Poland Nominalistic Neologicism, XX SIUCC SEFA (Sociedad Española de Filosofia Analitica) Workshop with Crispin Wright, University of Barcelona, Spain Platonism, Dynamic Reasoning, and Galileo on Falling Bodies, Logic, Reasoning, Rationality, Ghent Univer-2010 sity, Belgium Nominalism and the modal unstability of Barcan and Reversed Barcan formulas across orders, Cell Workshop

on Second-Order Modal Logic, School of Advanced Study, University of London, United Kingdom

2009

2006

Anti-Fregean neologicism, Trends in the Philosophy of Mathematics (Trends in Logic VII), Goethe University, Frankfurt, Germany

- (1) Abstraction Principles, a modal interpretation and (2) Platonic thought experiments? Mundane but adaptive, Société de Philosophie Analytique congress, Geneva, Switzerland
- (1) Induction from a single instance: incomplete frames (with Frederik Van De Putte) and (2) Adaptive reasoning with dynamic conceptual frames, Concept Types and Frames in Language, Cognition, and Science, Heinrich-Heine-Universität, Düsseldorf, Germany

Plurals and the cumulative set hierarchy, Non-Classical Mathematics 2009, Hejnice, Czech Republic Swinburne's modal argument for the existence of souls; Formal aspects (with Agnieszka Rostalska), Formal Methods in the Epistemology of Religion, Katholieke Universiteit Leuven, Belgium

Paradox & Reference, PhDs in Logic workshop, Ghent University, Belgium

(1) Logic and Philosophy: a case study: a modal argument for the existence of souls (with Agnieszka Rostalska) and (2) Capturing dynamic conceptual frames, Workshop & Young Researchers Days in Logic, Philosophy and History of Science, Palais des Académies, Brussels, Belgium

Reducing sets to modalities, 31st International Wittgenstein Symposium of the Austrian Ludwig Wittgenstein Society, Kirchberg, Austria

Time Travel and Conditionals, Logica 2007, Hejnice, Czech Republic

Tooley's Example and Conditional Logics, the annual meeting of the Society for Exact Philosophy, UBC, Vancouver, Canada

Some Problems with Leśniewski's Foundations of Mathematics, Mathematical Methods in Philosophy, Banff International Research Station for Mathematical Innovation and Discovery, Canada

The (in)significance of Tooley's example, a commentary at the Western Canadian Philosophical Association Conference, University of British Columbia, Vancouver, Canada

### **EDITORIAL & ORGANIZATIONAL WORK**

Associate Editor: Studia Logica

**Referee:** Bulletin of Symbolic Logic, Erkenntnis, Synthese, Council for the Humanities of the Netherlands Organization for Scientific Research, Review of Symbolic Logic, Studia Logica, Journal of Philosophical Logic, Journal of Applied Non-Classical Logic, Logique & Analyse, Journal of Philosophical Research, Foundations of Science, History and Philosophy of Logic, Theoria, Logic and Logical Philosophy, Polish Journal of Philosophy

Main Organizer: International Conference for Philosophy of Science and Formal Methods in Philosophy (CoPS-FaM-19) of the Polish Association for Logic and Philosophy of Science, Gdansk, Poland, Entia et Nomina 2018, Gdansk, Poland, Entia et Nomina 2017, Palolem, India, Swamplandia - Meta-arithmetical results and their philosophical meaning, Ghent University, 2016, Academic Caffee of the Polish Academy of Science, University of Gdańsk, Poland, 2016, Trends in Logic XIV, 2014, Ghent University, Belgium, Philosophers' Rally, 2012, University of Gdańsk, Poland, Entia et Nomina 2013, Entia et Nomina 2011, Entia et Nomina 2010, University of Gdańsk, Poland, Graduate Colloquia Series, University of Calgary, 2007-2008

Leadership
PhD, Michał Tomasz Godziszewski, Warsaw University, Poland
Semantic Non-conservativeness, non-absoluteness of satisfaction and computable quotient representations of
nonstandard models. (to be defended this year, title tentative)
Assistant Professor at the Chair, dr. Pavel Janda
Postdoctoral fellow
Replicability crisis in forensic sciences, dr Michał Sikorski
Postdoctoral fellow
Overcoming the paradoxes of naive logical vailidity and informal provability using non-deterministic truth-
maker semantics, dr Paweł Pawłowski
Postdoctoral fellow
Formal Epistemology with Bounded Rationality and Law, dr. Pavel Janda, University of Gdańsk, Poland
PhD, Biases in legal applications of machine learning, Weronika Majek, University of Gdańsk, Poland (ongoing, title tentative)
PhD, Pawel Pawlowski, Ghent University, Belgium
Informally provable, refutable or neither. A non-deterministic approach to informal provability.
Committee: Leon Horsten, Hannes Leitgeb, Stewart Shapiro, Frederik Van De Putte, Peter Verdée
Tutoree accepted for a PhD program in Philosophy at Carnegie Mellon University, Alicja Kowalewska,
Poland (ongoing cooperation)
BA supervisee accepted for the MA program in AI at Vrije Universiteit Amsterdam, Alicja Dobrzeniecka
Assistant Professor at the Chair, dr. Patryk Dziurosz-Serafinowicz (ongoing cooperation)

MA supervisee accepted for a PhD program at Trinity College Dublin, Zuzanna Gnatek