Personal information

Surname / First name	**Blanchard, Enka**
Address	Digitrust, Loria, Université de Lorraine. Campus scientifique, 54506 Vandoeuvre-lès-Nancy Cedex, FRANCE
Personal Email	Enka.Blanchard@gmail.com ; website : www.koliaza.com
Nationality	French
Date of birth	August 1991
Languages spoken	Native speaker in English and French. Oral and reading proficiency in Spanish, moderate reading and oral comprehension in Italian and Portuguese, basics in Russian

Education and Employment

2020-20XX	Second PhD thesis on disabled spatialities, supervised by Jacques Lévy within the Spatial Intelligence Chair of Université Polytechnique Hauts-de-France.
2019–2021	Post-doctoral researcher at Digitrust Consortium, Loria, Université de Lorraine. Tasked with creating transdisciplinary research projects involving the six member laboratories (mathematics, economics, political science, informatics, automatics, and psychology). Work on topics related to voting (accessibility with a focus on disabled people, detection of fraud, absentee voting), geography (focused on disabled spatialities), and cybersecurity (authentication, crowdsourced designs)
2016-2019	PhD thesis with Nicolas Schabanel and Ted Selker at IRIF, Paris VII University, focused on psychosocial aspects of security for authentication and voting. Title: "**Usability: low tech, high security**" *PSL 2020 International PhD* award for best thesis at the Science/Humanities Interface
2015-2016	Research project with Nicolas Schabanel at Paris VII university on clustering problems
2014–2015	Graduated from the Parisian Master of Research in Computer Science (MPRI), *summa cum laude*, focusing on theoretical computer science ranked 2nd/61 Thesis titled: "Dynamic Facility Location : Minimizing Sum of Radii"
2014	Research project on parameterised complexity With Prof. Saket Saurabh at IMSC, India
2013	Research projects with Prof. Eldar Fischer at Technion, Israel, on longest paths in k-connected graphs, and with Prof. Janos Makowsky on graph polynomials
2012–2015	Scolarity at École Normale Supérieure de Paris (admitted 9th in the INFO concours)
2011–2012	Double Bachelor degrees (L3) in Mathematics and Computer Science from Paris VII
2009–2011	Freelance web designer and computer technician

Membership in research organisations and community service

2021–20XX	Associate Researcher, Center for Internet and Society, CNRS (UPR 2000).
2021–20XX	Program Committee member, International Joint Conference on Electronic Voting.
2020–20XX	Member, Caltech/MIT Voting Technology Project — research group on voting centred around Michael Alvarez, Charles Stewart III and Ronald Rivest
2018–20XX	Member, Chôros (choros.place) — research group/think tank working on two main subjects spatial justice, and public participation in democratic processes
2016–20XX	Member, Random Sample Voting Project (rsvoting.org) — academic group developing and implementing new cryptographic voting systems for direct democracy
2016–20XX	Founding member, POP Special Exploratory Committee (poplatform.org) — organisation working on implementing direct democratic processes without major legislative reforms

2015–20XX	Secretary, Archive of Research in Mathematical Sciences and Philosophy — organisation seeking to preserve recordings of major scientific conferences and interviews with founders of contemporary physics

Teaching

2020	Co-organiser and speaker in the "Law and Informatics" seminar, and two sessions on the geographies of disability in the "Psychopolitics" seminar, at EHESS
Fall 2017 and Fall 2018	In charge of the Foundations of Computer Science M1 course (curriculum, theoretical classes and exercise sessions), Paris Diderot Engineering School
Spring 2016 and Spring 2017	In charge of Systems and Network Engineering M1 course (curriculum, theoretical classes, practical sessions and exercise sessions), Paris Diderot Engineering School
Summer 2017	Creator of the inaugural MOOC — on graph separators — on the Mathmosphere Platform
2016-2017	Coach to educators, co-organiser for the creation of Animath clubs, and teacher to university and high-school students in Kosovo and Moldova (week-long trips)
2014-2015	Speaker for four conferences on recent developments in mathematical research to high school students in Paris with Animaths (30-100 participants)
2014-2015	Organiser of three intro to research workshops for high schoolers at ENS with ParisMaths (half-day with 30-60 participants)

Advisorship

Spring-Summer 2018	Academic co-supervisor for François Gaudré's M2 internship at the Minisère des Armées on deep neural networks for image recognition in software testing
Summer 2018	Supervisor for Ines Dardouri and Pierre Midavaine's L2 internships on bilingual palindrome generation
Summer 2018	Supervisor for Rayann Kaiss' L2 internship on probabilistic games
Summer 2018	Supervisor for Amira Lakdhar's L1 internship on analyzing human word choice patterns
Spring-Summer 2017	Academic co-supervisor for Elodie Decerle's M2 internship at THALES on secure network stack implementations for drone debugging software

Public interventions

2020	Invited speaker and moderator, round-table at the MCAA Conference on Research and Democracy: "How artificial intelligence, robotics and bionics influence accessibility and inclusion"
2019	Invited speaker at the VoteVerif workshop (on voting verification) at University of Luxembourg
	Invited expert at the Privacy and Cybersecurity Workshop at IU Gateway, Berlin
2018	Invited speaker at the Workshop on Digital Identity, Global Citizenship and the Future of Democracy in Berlin, Germany. Co-organiser of large-scale testing of Random Sample Voting combined with e-Identity technology in Germany, in collaboration with the Humboldt Institute for Internet and Society, and Advocate Europe
	Invited speaker at POINT Conference on Political Accountability and New Technologies, talk on the political implications of Random Sample Voting, Sarajevo, Bosnia and Herzegovina,
	Invited speaker at Stanford's EE380 seminar and MIT CSAIL: "Safe passwords made easy to use", Palo Alto and Boston, USA
	Invited speaker for SFS scholars at UMBC: "Usability and psychology in voting system design", Baltimore, USA
2017	Invited speaker, conference on new forms of citizen participation at the Lieu d'Europe, Strasbourg, France
	Invited member of an expert panel and in charge of large-scale RSV demo at the World Forum on Democracy, Strasbourg, France
2016	Member of an expert panel, speaker and organiser of the first public RSV vote at the Global Forum on Modern Direct Democracy, San Sebastian, Spain

Research Publications

Published, 2021

Enka Blanchard, Zacharie Boubli, and Charlotte Lemaistre. Le COVID-19 au prisme des minorités vulnérables. *EspacesTemps.net*, 2021. 10.26151/espacestemps.net-1978-7z05

Enka Blanchard, Stephane Gallardo, Shin Koseki, Carole Lanoix, Olivier Lazzarotti, and Irene Sartoretti. Observer pour inventer : la ville d'après. *EspacesTemps.net*, 2021. 10.26151/espacestemps.net-tqy9-x419

2020

Enka Blanchard and Ted Selker. Origami voting: a non-cryptographic approach to transparent ballot verification. In *VOTING – 5th Workshop on Advances in Secure Electronic Voting*, 2020

Enka Blanchard. Crips : les oubliés de la collapso. *Yggdrasil*, 7, 2020. Not peer-reviewed

Zacharie Boubli, Enka Blanchard, and Charlotte Lemaistre. La thanatopolitique du COVID-19. *Le Grand Continent*, 2020. (Not peer-reviewed)

Enka Blanchard, Ted Selker, and Florentin Waligorski. Towards an empirical cost model for mental password algorithms. In *Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems*, CHI EA '20, page 1–8, 2020

Enka Blanchard, L. Gabasova, Ted Selker, and Eli Sennesh. Cue-Pin-Select, a Secure Mental Password Manager. In *COMPSAC – IEEE Computers, Software, and Applications Conference*, 2020

Enka Blanchard. Making more extensive and efficient typo-tolerant password checkers. In *SDIM@COMPSAC – Secure Digital Identity Management Workshop co-located with COMPSAC*, 2020

Enka Blanchard and Siargey Kachanovich. Usable everlasting encryption using the pornography infrastructure. In *COMPSAC – IEEE Computers, Software, and Applications Conference, Fast Abstracts*, 2020

Enka Blanchard. Crip spatialities and temporalities II : a systematic typology of temporal taxes. *EspacesTemps.net*, 2020. 10.26151/espacestemps.net-g7ca-v287

Enka Blanchard. Crip spatialities and temporalities I : discreet crips in a discrete world. *EspacesTemps.net*, 2020. 10.26151/espacestemps.net-vmak-xq38

2019

N. Blanchard. CIVICS: Changing Incentives for Voters in International Cooperation through Sampling. In *Smolny Conference*, 2019

N. Blanchard. Comment corriger efficacement les typos dans les mots de passe. In *ALGOTEL 2019 – 21èmes Rencontres Francophones sur les Aspects Algorithmiques des Télécommunications*, 2019

L. R. Gabasova, N. Blanchard, Bernard Schmitt, Will M. Grundy, Cathy B. Olkin, John R. Spencer, Leslie A. Young, Kimberly Ennico Smith, Hal A. Weaver, Alan Stern, and New Horizons COMP team. Pluto surface composition from spectral model inversion with metaheuristics. In *European Planetary Science Congress*, 2019

N. Blanchard, L. Gabasova, and Ted Selker. Consonant-Vowel-Consonant for Error-Free Code Entry. In *HCI International Conference*, 2019

N. Blanchard and Siargey Kachanovich. A note on the inflating enclosing ball problem. In *5th Bordeaux Graph Workshop*, 2019

N. Blanchard, Siargey Kachanovich, Ted Selker, and Florentin Waligorski. Reflexive memory authenticator: a proposal for effortless renewable biometrics. In *ETAA – 2nd International Workshop on Emerging Technologies for Authorization and Authentication*, 2019

N. Blanchard. Password typo correction using discrete logarithms. In *ICCSCE – 8th International Conference on Computer Science and Communication Engineering*, 2019

N. Blanchard and Siargey Kachanovich. Counting authorised paths in constrained control-flow graphs. In *5th Bordeaux Graph Workshop*, 2019

Enka Blanchard. *Usability: low tech, high security.* PhD thesis, 2019

2018

N. Blanchard. Building trust for sample voting. *International Journal of Decision Support System Technology*, 10(4), 2018

L. Gabasova, N. Blanchard, Bernard Schmitt, Will Grundy, and New Horizons COMP team. Progressive metaheuristics for high-dimensional radiative transfer model inversion. *European Planetary Science Congress*, 2018

N. Blanchard, Clément Malaingre, and Ted Selker. Improving security and usability with guided word choice. *ACSAC – 34th Annual Computer Security Applications Conference*, 2018

N. Blanchard, L. Gabasova, Ted Selker, and Eli Sennesh. Créer de tête de nombreux mots de passe inviolables et inoubliables. In *ALGOTEL 2018 – 20èmes Rencontres Francophones sur les Aspects Algorithmiques des Télécommunications*, 2018

N. Blanchard, Clément Malaingre, and Ted Selker. Mots de passe : le choix humain plus sécurisé que la génération aléatoire. In *ALGOTEL 2018 – 20èmes Rencontres Francophones sur les Aspects Algorithmiques des Télécommunications*, 2018

N. Blanchard and Ted Selker. Improving voting technology is hard: the trust-legitimacy-participation loop and related problems. In *STAST – Workshop on Socio-Technical Aspects in Security and Trust*, 2018

2017

N. Blanchard. Building trust for sample voting. In G. Camilleri, G. Cèze, F. Dupin de St-Cyr, and P. Zaraté, editors, *Proceedings of TeSS*, 2017

N. Blanchard and Nicolas Schabanel. Dynamic Sum-Radii Clustering. In Sheung-Hung Poon, Md. Saidur Rahman, and Hsu-Chun Yen, editors, *WALCOM – Algorithms and Computation: 11th International Conference and Workshops*, pages 30–41. Springer International Publishing, 2017

2016

N. Blanchard and Nicolas Schabanel. Clustering Dynamique par Rayon . In *ALGOTEL 2016 – 18èmes Rencontres Francophones sur les Aspects Algorithmiques des Télécommunications*, Bayonne, France, 2016

N. Blanchard. Vote par sondage uniforme incorruptible. In *ALGOTEL 2016 – 18èmes Rencontres Francophones sur les Aspects Algorithmiques des Télécommunications*, Bayonne, France, 2016

2014

Johann A. Makowsky, Elena V. Ravve, and N. Blanchard. On the location of roots of graph polynomials. *European Journal of Combinatorics*, 41:1–19, 2014

Accepted papers and preprints

Enka Blanchard and Giuseppe Longo. From axiomatic systems to the dogmatic gene and beyond. *To appear in Biosystems, special issue on Foundations of Mathematics and Theoretical Biology*, 2021

Enka Blanchard and Ashley Shew. Disabled dimensionalities. *Provisionally accepted at Welfare e Ergonomia*, 2021

Submitted papers and preprints

Enka Blanchard, Ryan Robucci, Ted Selker, and Alan T. Sherman. Phrase-verified voting: Verifiable low-tech remote boardroom voting. 2021

Enka Blanchard, Sébastien Bouchard, and Ted Selker. Visual secrets: A recognition-based security primitive and its use for boardroom voting. 2021

Enka Blanchard. Client-side hashing for efficient typo-tolerant password checkers. 2020

Ted Selker and Enka Blanchard. Design ideas to improve the usability and security of mail-in ballots. 2020

Enka Blanchard and Xavier Coquand. Du hachage côté client pour l'authentification par mot de passe. 2020

Enka Blanchard. Where are the missing trans crips? 2020

Enka Blanchard. A travelling crip's temporal expenses. 2020

Enka Blanchard. What's in a name, a gender, a crip? 2020

Leo Adams, Enka Blanchard, Inès Dardouri, Levi Gabasova, and Pierre Midavaine. "Set up son? Scam set, asserts Bob": Semi-Automatic Generation of Bilingual Palindromes. 2020

Enka Blanchard. La Démocratie Hasardeuse (book). 2019

Enka Blanchard, Ted Selker, and Alan T. Sherman. Boardroom voting: Practical verifiable voting with ballot privacy using low-tech cryptography in a single room. 2019

Enka Blanchard, Eldar Fischer, Oded Lachish, and Felix Reidl. Longest paths in 2-edge-connected cubic graphs. 2019

Outreach

2020 Caltech/MIT Voting Technology Project. Making sure that your vote is counted in 2020

Enka Blanchard and L. Gabasova. L'intelligence artificielle sans les neurones. *Brochure CIJM*

Enka Blanchard, Sylvain Kahn, Carole Lanoix, Mélanie Le Guen, Olivier Lazzarotti, Jacques Lévy, and Irene Sartoretti. La science citoyenne et la démocratie interactive pour gouverner l'incertain. *Le Monde, 7-8 mai*, 2020

2018 N. Blanchard. Des mots de passe...pas très secrets. *Tangente*, 180

N. Blanchard. Une course démoniaque. *Brochure CIJM*

2017 N. Blanchard and L. Gabasova. Democratic tools for the future. *Worldcon 75 poster*

2016 N. Blanchard and L. Gabasova. Des outils mathématiques pour votre GPS. *Brochure CIJM*

2015 N. Blanchard. Le théorème des graphes parfaits. *Bibli Tangente*, 54

N. Blanchard. Même le hasard peut créer des certitudes. *Bibli Tangente*, 55

N. Blanchard. Non, les problèmes ne sont pas tous de même difficulté ! *Bibli Tangente*, 55

N. Blanchard. Prouver rapidement qu'une propriété est vérifiée...ou pas. *Bibli Tangente*, 55

N. Blanchard. De Poincaré à Perelman : une grande épopée mathématique. *Tangente*, 165

Current Research Subjects

Using neurological insights to create new biometric primitives with Ted Selker

Psychological cost models for mental algorithms with Ted Selker

Voting system designs to improve the accessibility, usability and security of absentee voting with Ted Selker

Design of low-tech voting systems for online and offline boardroom voting with Ted Selker and Alan Sherman

European legal frameworks of disability recognition and mobility rights for disabled people within the EU with Alexandra Nothnagel

Geographies of disability with Jacques Lévy and Olivier Lazzarotti

Algorithms for distributed agent systems with Sebastien Bouchard and Andrzej Pelc

Meta-heuristics and graph colouring to map the surface composition of Pluto with Levi Gabasova

Cross-jurisdictional analysis of legality of crowdsourcing semi-public data for analysis with Sunimal Mendis, Ishupal Kang, Arthur Milchior and Épiphanie Gédéon

Parallels between current work on the artificial intelligence alignment problem and historical works on the evolution of political institutions with Jörg Pohle

Shifting equilibria between recognised experts and writers/futurologists in handling crisis responses during the Covid pandemic, with Fleur Hopkins

Small-world network effects to model impostor syndrome in academia with Mark Mirmelstein

Erdős-Rényi graphs to unify multiple models of geographic interactions with Jacques Lévy and Patrick Poncet

Scientific Interests

Mathematics and CpSci: Graph Theory, Algorithmics, Game theory. Logic and Model Theory. Voting and Computational Social Choice Theory. Probabilities. Bioinformatics. User interfaces. Computational Psychology

Social sciences: Geography. Crip Theory. Queer studies. Cliometrics. Political philosophy. Ancient Greek History.