

## Personal information

Surname(s) / First name(s)

Address(es)

Email(s)

Nationality(-ies)

Date of birth

**Blanchard, Enka (previously Blanchard, N.K. )**

Digitrust, Loria, Université de Lorraine. Campus scientifique, 54506 Vandoeuvre-lès-Nancy Cedex, FRANCE

Enka.Blanchard@gmail.com ; website : www.koliaza.com

French

August 1991

## Education and Employment

2008–2009

French Scientific Baccalaureate, specialization in Mathematics

2009–2011

Freelance web designer and computer technician

2011–2012

Graduated in Mathematics and Computer Science from Paris VII with additional graduate model theory and algorithmic classes

2012–2015

Scolarity at ENS Ulm through the Maths-CpSci Concours (ranked 9th) and MPRI (Parisian Master of Research in Computer Science) focusing on theoretical CpSci

2013

Internship with Prof. Eldar Fischer at Technion, Israel, on longest paths in k-connected graphs. Additional work with Prof. Janos Makowsky on graph polynomials

2014

Intership With Prof. Saket Saurabh at IMSC, India, on parameterised complexity

2014–2015

MPRI Diploma, *summa cum laude*, ranked 2nd/61

2015

Internship and Master's thesis with Nicolas Schabanel at LIAFA.  
Title: "Dynamic Facility Location : Minimizing Sum of Radii"

2016–2019

Doctoral candidate at Université Paris VII

2019

Phd thesis with Nicolas Schabanel and Ted Selker at IRIF.  
Title: "Usability: low tech, high security"

2019–202X

Post-doctoral researcher at Digitrust, Loria, Université de Lorraine

## Academic Groups

2016–2019

PhD student in the Distributed Algorithms and Graphs team at IRIF

2015–20XX

Secretary, Archive of Research in Mathematical Sciences and Philosophy

2016–20XX

Member, Random Sample Voting Project (rsvoting.org)

2016–20XX

Founding member, POP Special Exploratory Committee (popplatform.org)

2018–20XX

Member of Chôros (choros.place)

## Research Publications

- Published, 2014 Johann A. Makowsky, Elena V. Ravve, and N. K. Blanchard. On the location of roots of graph polynomials. *European Journal of Combinatorics*, 41:1–19, 2014
- 2016 N. K. Blanchard and Nicolas Schabanel. Clustering Dynamique par Rayon . In *ALGOTEL 2016 - 18èmes Rencontres Francophones sur les Aspects Algorithmiques des Télécommunications*, Bayonne, France, 2016
- N. K. Blanchard. Vote par sondage uniforme incorruptible. In *ALGOTEL 2016 - 18èmes Rencontres Francophones sur les Aspects Algorithmiques des Télécommunications*, Bayonne, France, 2016
- 2017 N. K. 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. K. 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 – WALCOM*, pages 30–41. Springer International Publishing, 2017
- 2018 N. K. Blanchard. Building trust for sample voting. *International Journal of Decision Support System Technology*, 2018
- Leila Gabasova, N. K. 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. K. Blanchard, Clément Malaingre, and Ted Selker. Improving security and usability with guided word choice. *34th Annual Computer Security Applications Conference – ACSAC*, 2018
- N. K. 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*, Roscoff, France, 5 2018
- N. K. Blanchard, Leila 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*, Roscoff, France, 5 2018
- N. K. Blanchard and Ted Selker. Improving voting technology is hard: the trust-legitimacy-participation loop and related problems. In *Workshop on Socio-Technical Aspects in Security and Trust – STAST*, 2018
- 2019 N. K. Blanchard. CIVICS: Changing Incentives for Voters in International Cooperation through Sampling. In *Smolny Conference*, 2019
- N. K. Blanchard. Comment corriger efficacement les typos dans les mots de passe. In *ALGOTEL 2019 - 21èmes Rencontres Francophones sur les Aspects Algorithmiques des Télécommunications*, 2019
- Leila R. Gabasova, N. K. 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
- Enka Blanchard. *Usability: low tech, high security*. PhD thesis, 2019
- N. K. Blanchard, Leila Gabasova, and Ted Selker. Consonant-Vowel-Consonant for Error-Free Code Entry. In *HCI International Conference*, 2019
- N. K. Blanchard and Siargey Kachanovich. A note on the inflating enclosing ball problem. In *5th Bordeaux Graph Workshop*, 2019

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

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

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

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

Accepted Enka Blanchard. Discreet crips in a discrete world: spatialities and temporalities of disability. *Accepted for publication at Espaces-Temps.net*, 2020

Enka Blanchard and Ted Selker. Towards an empirical cost model for mental password algorithms. In *Accepted for publication at the Conference on Human Factors in Computing Systems (CHI)*, 2020

Submitted Enka Blanchard. La Démocratie Hasardeuse (book). 2019

Enka Blanchard, Leila Gabasova, Ted Selker, and Eli Sennesh. Cue-Pin-Select, a Secure and Usable Offline Password Scheme. 2019

Enka Blanchard. Secure and efficient password typo tolerance. 2019

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

Enka Blanchard and Siargey Kachanovich. Usable everlasting encryption using the pornography infrastructure. 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

N. K. 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

## Public Interventions

- 2016 Multiple talks, member of an expert panel and organizer of the first public RSV vote at the Global Forum on Modern Direct Democracy
- 2017 Invited talk at a conference on new forms of citizen participation at the Lieu d'Europe  
Invited member of an expert panel and in charge of large-scale RSV demo at the World Forum on Democracy
- 2018 Invited talk at the Workshop on Digital Identity, Global Citizenship and the Future of Democracy  
Invited talk at POINT Conference on Political Accountability and New Technologies

Invited talks at Stanford's EE380 seminar and MIT CSAIL: "Safe passwords made easy to use"

Invited talk to SFS scholars at UMBC: "Usability and psychology in voting system design"

2019 Invited talk at the VoteVerif workshop at University of Luxembourg

Invited expert at the Privacy and Security Workshop at IU Gateway, Berlin

2020 Invited round-table speaker at the MCAA Conference on Research and Democracy: "How artificial intelligence, robotics and bionics influence accessibility and inclusion"

## Popularization

N. K. Blanchard. Le théorème des graphes parfaits. *Bibliothèque Tangente*, 54:62–67, 2015

N. K. Blanchard. Même le hasard peut créer des certitudes. *Bibliothèque Tangente*, 55:116–118, 2015

N. K. Blanchard. Non, les problèmes ne sont pas tous de même difficulté! *Bibliothèque Tangente*, 55:108–114, 2015

N. K. Blanchard. Prouver rapidement qu'une propriété est vérifiée... ou pas. *Bibliothèque Tangente*, 55:132–133, 2015

N. K. Blanchard. De Poincaré à Perelman : une grande épopée mathématique. *Tangente*, 165:48–50, 2015

N. K. Blanchard and Leila Gabasova. Des outils mathématiques pour votre GPS. *CIJM yearly journal*, 2016

N. K. Blanchard and Leila Gabasova. Democratic tools for the future, 2017

N. K. Blanchard. Des mots de passe...pas très secrets. *Tangente*, 180:18–19, 2018

N. K. Blanchard. Une course démoniaque. *CIJM yearly journal*, 2018

## Teaching

2014-2015 Organized three intro to research workshops for high schoolers at ENS with ParisMaths (half-day with 30-60 participants)

2014-2015 Four conferences on recent developments in mathematical research to high school students in Paris with Animaths (30-100 participants)

2016-2017 Creation of Animath clubs, teaching to educators, university and high-school students in Kosovo and Moldova

Summer 2017 Inaugural MOOC on graph separators on the Mathmosphere Platform

Spring 2016 and Spring 2017 In charge of Systems and Network Engineering M1 course, Paris Diderot Engineering School

Fall 2017 and Fall 2018 In charge of Foundations of Computer Science M1 course, Paris Diderot Engineering School

## Advisorship

Spring-Summer 2017 Academic co-supervisor for Elodie Decerle's M2 internship at THALES

Spring-Summer 2018 Academic co-supervisor for François Gaudré's M2 internship at the Ministère des Armées

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

## Early Coding and Research Projects

2011–2012

Backend for OpenStreetMaps (Ocaml) ; Internal message service for Unix systems (C)

## Languages

Mother tongue(s)

**French, English**

Oral and reading proficiency in Spanish, basics in Russian

## Scientific Interests

Mathematics and CpSci

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

Social sciences

Cliometrics. Political philosophy. Ancient Greek History. Gender studies.

## Personal Interests

Fiction Writing

I enjoy developing realistic alternate universes, and write short SFF stories and an interactive fiction with O. Pivot

Photography

Multiple small exhibits (pubs and local places), which are on my website (koliaza.com)

Music

I sing and play the piano and melodica, specializing in blues