

# Matías Carrasco Kind

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## Positions

- 2024 – present **Faculty in Residence**, Discovery Partners Institute, DPI, Chicago, IL, USA.
- 2021 – present **Director**, Data Science Research Services, Gies College of Business, UIUC, IL, USA.  
**Research Assistant Professor**, Department of Accountancy, UIUC, IL, USA.  
**Research Assistant Professor**, National Center for Supercomputing Applications.
- 2020 – 2021 **Assistant Director**, Data Science Research Services, Gies College of Business, UIUC.
- 2019 – present **Research Assistant Professor**, Department of Astronomy, UIUC, IL, USA.
- 2018 – 2021 **Senior Research Scientist**, National Center for Supercomputing Applications (NCSA).
- 2014 – 2017 **Research Scientist**, National Center for Supercomputing Applications (NCSA), UIUC.
- 2008–2010 **Adjunct Professor**, Universidad Andres Bello (UNAB), Santiago, Chile.
- 2008–2010 **Research Scientist**, Universidad Andres Bello (UNAB), Santiago, Chile.
- 2006–2008 **Graduate student (IMPRS PhD student)**, MPA, Garching, Germany.
- 2006 **LENAC/ALFA visitor**, Max Planck Institute for Astrophysics (MPA).

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## Education

- 2010 – 2014 **Ph.D., Astrophysics**, Department of Astronomy, University of Illinois at Urbana-Champaign (UIUC), IL, USA .  
with Computational Science and Engineering (CSE) graduate option
- Thesis title *"Probabilistic Photometric Redshifts in the era of Petascale Astronomy"*, Advisor: Prof. Dr. Robert Brunner (UIUC)
- 2011 **M.S., Astrophysics**, University of Illinois at Urbana-Champaign (UIUC), IL, USA.
- 2006 – 2008 **Ph.D. candidate**, Ludwig-Maximilians Universität, München, Germany, Program carried out through the International Max-Planck Research School (IMPRS) at Max-Planck Institute for Astrophysics (MPA), Garching, Germany.
- Thesis title *"Large-scale structure in the galaxy distribution"*, Advisors: Prof. Dr. S.D.M. White (MPA), Dr. G. Kauffmann (MPA)
- 2006 **B.S., Astronomy (5 years program)**, Pontificia Universidad Católica de Chile (PUC), Santiago, Chile, summa cum laude.  
Thesis carried out at Max-Planck Institute for Astrophysics (MPA), Garching, Germany
- Thesis title *"Environmental dependence of Dark Matter Halos properties in a  $\Lambda$ CDM Universe"*, Advisors: Prof. Dr. S.D.M. White (MPA), Dr. Felipe Barrientos (PUC)

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## Languages

- Spanish Native
- English Fluent, written and spoken
- German Written (basic), spoken (intermediate level)

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## Experience

### Teaching

- 2024 **Professor**, BDI 513: Data Storytelling, Business Analytics, UIUC, USA.  
**Professor**, BDI 367: Data Visualization and Communication, UIUC, USA.
- 2023 **Professor**, BDI 513: Data Storytelling, Business Analytics, UIUC, USA.  
**Professor**, BDI 367: Data Visualization and Communication, UIUC, USA.  
**Professor**, BIOE 488: Applied HPC for Imaging Science, Bio Engineering, UIUC, USA.
- 2022 **Professor**, BDI 513: Data Storytelling, Business Analytics, UIUC, USA.  
**Professor**, BDI 367: Data Visualization and Communication, UIUC, USA.  
**Invited Lecturer**, Astrophysical Seminar, UIUC, USA.
- 2021 **Invited Lecturer**, AI in Astronomy Seminar, UIUC, USA.
- 2017 **Invited Lecturer**, PhD Seminar, Cosmology, University of Chicago, USA.
- 2016 **SPIN (Students Pushing INnovations) Mentor**, NCSA, UIUC, USA.
- 2015 **SPIN Mentor**, NCSA, UIUC, USA.
- 2014 **SPIN Mentor**, NCSA, UIUC, USA.  
**NSF POP (Passionate On Parallel) REU (Research Experience for Undergraduates) Mentor**, UIUC, USA.  
**Google Summer of Code Mentor**, For the LCDM organization at UIUC, Google, CA.
- 2011 **Laboratory Teaching Assistantship**, ASTR132: Stars and Galaxies Lab, UIUC, USA.  
**Teaching Assistantship**, ASTR122: Stars and Galaxies, UIUC, USA.
- 2010 **Teaching Assistantship**, ASTR404: Stellar Astrophysics, UIUC, USA.
- 2010 **Instructor**, FMF023: Introduction to Physics, FMF122: Classical Mechanics and FMF241: Electromagnetism for Physics and Civil Engineering, UNAB, Chile.  
**Instructor**, FMF120: Acoustic Physics for Phonoaudiology, UNAB, Chile.
- 2010.summer **Instructor**, FMF122: Classical Mechanics for Civil Engineering, UNAB, Chile.
- 2009 **Instructor**, FMF023: Introduction to Physics, FMF122: Classical Mechanics and FMF241: Electromagnetism for Physics and Civil Engineering, UNAB, Chile.  
**Instructor**, FMF019: Physics for Medicine, UNAB, Chile.
- 2009 **Instructor**, FMF023: Introduction to Physics, FMF122: Classical Mechanics and FMF241: Electromagnetism for Physics and Civil Engineering, UNAB, Chile.
- 2008 **Instructor**, FMF122: Classical Mechanics for Civil Engineering, UNAB, Chile.  
**Instructor**, FMF019: Physics for Medicine, UNAB, Chile.  
**Lab Graduate T.A.**, Two laboratory courses (Mechanics and Waves and Heat), PUC.
- 2002 – 2005 **Undergraduate T.A.**, 8 teaching assistantships, Contemporary Physics, Electromagnetism (x3), Advanced Mathematical Methods of Physics, Mechanics, General Astrophysics, Modern Physics, PUC.  
**Lab Undergraduate T.A.**, 8 laboratory teaching assistantship, PUC.

### Mentorship

- Advisor Research Advisor for over 30 undergraduates, over 15 graduates and 6 PhD students
- PhD thesis Qingwen Liang (Business), Brandon Buncher (Physics), Grant Merz (Astronomy + DS)

## Computer programming experience

- OS Unix, Linux, OS X, Windows
- Languages Python, R, C/C++, Fortran, Go, Shell, HTML, CSS, Javascript, PL/SQL, L<sup>A</sup>T<sub>E</sub>X
- Others HPC, Condor, Cuda, Data Intensive Science, AI/ML, Spark, Flask/Tornado, Docker, Web components/development, MongoDB, SQL, Redis, Kubernetes, Cloud computing

## Other professional experience

- 2024 **DEI Liaison** , Gies College of Business, UIUC.
- 2022 **Program Committee** , 3rd Deep Learning Theory and Applications Conference, Lisboa.
- 2021 **Program Committee** , 2nd Deep Learning Theory and Applications Conference, France.
- 2020 **Snowmass 2021 Co-Convener**, Computational Frontier *Reinterpretation and long-term preservation of data and code* convener, US National Physics program.
- Program Committee** , 1st Deep Learning Theory and Applications Conference, France.
- Program Committee** , Gateways 2020 Conference, USA.
- 2018 – current **Data Release Scientist**, Dark Energy Survey, USA.
- 2018 **LOC/SOC co-chair**, Data Visualization and Exploration in the LSST Era, NCSA, Urbana, IL, USA, June 19.
- 2017 – 2018 **Science Release Working Group chair**, Dark Energy Survey, USA.
- 2017 **LOC**, DES Chicagoland meeting, NCSA, Urbana, IL, USA, October 3.
- 2016 **SOC**, LSST photo-z Workshop, University of Pittsburgh, Pennsylvania, PA, USA, April 5-7.
- 2015 **LOC**, DES Chicagoland meeting, NCSA, Urbana, IL, USA, December 10.
- Other **Referee for Journal of Open Source Software**, JOSS.
- Referee for Computer Science journal**, PeerJ Computer Science, PeerJ.
- Referee for Nature Astronomy**, Nature, Nature Publishing Group.
- Referee for Fondecyt (Chilean National Funds for Scientific and Technological Development)**, Government of Chile.
- Referee for instrumentation journal**, Sensors, MDPI.
- Referee for astronomical journals**, ApJ (IOP Publishing for the AAS), MNRAS (Oxford University Press), Astronomy & Computing (Elsevier), Experimental Astronomy (Springer), Astronomy & Astrophysics (Springer).

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## Scholarships and Honours

- 2024 **Faculty in Residence Professorship**, Discovery Partners Institute, DPI, USA.  
**List of Teachers Ranked as Excellent**, UIUC, USA.
- 2022 **List of Teachers Ranked as Excellent**, UIUC, USA.
- 2019 **National Academy of Sciences, Space Studies Board Panelist for Big Data**, National Academy of Sciences, USA.  
**Trusted CI Open Science Cybersecurity Fellowship**, NSF Cybersecurity Center of Excellence, NSF, USA.
- 2015 **Outstanding Contribution Award**, NCSA, IL, USA.
- 2013 **Junior scientist award to attend the DES International Collaboration meeting**, LBNL, CA, USA.
- 2012 **Financial aid award to attend** , ADASS-XXII, UIUC, Champaign-Urbana, USA.
- 2011–2013 **Computational Science and Engineering Fellowship**, UIUC, Urbana, USA.
- 2011 **Love of Learning Award**, Phi Kappa Phi honor Society, UIUC Chapter.
- 2011 **Phi Kappa Phi Honor Society Membership**, UIUC, Urbana-Champaign, IL, USA.
- 2009 **Beca Chile**, Merit-based scholarship given by the Chilean government for abroad PhD studies (Awarded but declined), CONICYT, Chile.
- 2006–2008 **IMPRS PhD fellowship**, from the International Max-Planck Research School in Astrophysics, MPA.
- 2006 **Marie Curie Host Fellowship for Early Stage Research Training**, (4 months), MPA.
- 2006 **ALFA/LENAC programme fellowship**, at Max-Planck Institut für Astrophysik, January to June. Fellowship given to exceptional Latin-americans students through the LENAC Network to complete a research training project in Europe, MPA-PUC.  
Summer school fellowship at Observatory UC from Universidad Católica
- 2002–2003 **FEUC scholarship**, Given by the Universidad Católica's student government for academic excellence in order to finance part of the annual university debt, PUC.

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## Projects/Grants

- 2024 **Tech Talent Hub**, Faculty in Residence, PI, \$65K, Discovery Partners Institute, DPI, USA.  
**Gies Consumer and Small Business Credit Panel**, Gies Research Grant, PI, \$120K  
Faculty in Residence Professorship, Gies College of Business, UIUC, USA.
- 2022 – present **Azure Research Award**, PI, \$160K to date in cloud credits during 3 years, Azure, USA.
- 2023 **DeepDISC-Roman: Detection, Instance Segmentation, and Classification for Roman with Deep Learning**, LSST Enabling Science Award , Co-PI, \$308K , NASA, USA.  
**CDS&E: Detection, Instance Segmentation, and Classification for Astronomical Surveys with Deep Learning (DeepDISC)** , Co-PI, \$489K , NSF, USA.
- 2017 **Data Visualization and Exploration in the LSST Era**, LSST Enabling Science Award , Co-PI, \$15K , LSST Corporation, USA.

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## Selected Seminars, Schools and Conferences

- 2023 • **5th International School on Deep Learning** , Bournemouth, UK, Jan 17 – 21, invited keynote.
- **Scientific Gateways 2023**, Pittsburgh, USA, Oct 29 – 31, contributed talk.
- 2021 • **2nd International Conference on Deep Learning Theory and Applications**, Virtual, July 9 – 7, invited keynote.
- **American Astronomical Society 237th meeting**, Virtual, January 9 – 13, DES DR2 release talk, DES special session.
- 2020 • **Frontier Development Lab: Big Think**, NASA AMES Research Center, CA, Jan 30, invited talk.
- 2019 • **CHPC National Conference** , Boksburg, South Africa, Dec 2 – 5, invited keynote.
- **National Academy of Sciences, Space Studies Board Meeting, Maximizing Scientific Outcome with Big Data**, Irvine, CA, Nov 6 – 7, invited talk and panelist.
  - **Laboratório Interinstitucional de e-Astronomia(LIneA) Seminar**, Rio de Janeiro, Brasil, Oct 10, invited webinar talk.
  - **NCSA Industry Conference** , NCSA, Urbana, IL, Oct 9 – 10, invited talk.
  - **Gateways 2019** , Science Gateways Community Institute, San Diego, CA, Sep 23 – 25, contributed talk.
  - **Practice and Experience in Advanced Research Computing (PEARC 19)**, Chicago, IL, July 28 – 31, contributed to panel.
  - **DES international collaboration meeting**, UPenn, Philadelphia, PA, June 17 – 21, contributed talks.
  - **Artificial Intelligence for Data Discovery and Reuse**, CMU, Pittsburgh, PA, May 13 – 15, contributed talk.
  - **UIUC Astrofest**, Urbana, IL, April 23rd, contributed talk.
- 2018 • **Kubecon 2018**, Seattle, WA, December 10 – 14.
- **AstroData2020s Science Workshop**, Caltech/IPAC, CA, USA, Dec 4 – 7, invited talk.
  - **DES international collaboration meeting**, Campinas, Brazil, Dec 3 – 7, contributed talk.
  - **Laboratório Interinstitucional de e-Astronomia(LIneA) Seminar**, Rio de Janeiro, Brasil, Oct 10, invited webinar talk.
  - **Near-Field Cosmology with the Dark Energy Survey’s DR1 and Beyond**, University of Chicago, USA, June 27 – 29, invited talk.
  - **Data Visualization and Exploration in the LSST Era**, Urbana, IL, June 19 – 21, contributed talks.
  - **9th Workshop on Scientific Cloud Computing**, Tempe, AZ, June 11 – 14, contributed talk.
  - **DES international collaboration meeting**, Texas A&M University, USA, May 14 – 18, contributed talk and session.
  - **Science Platforms/Server-Side Analytics Workshop**, STScI, Baltimore, MD, February 26 – 28, invited talk.
  - **American Astronomical Society 231st meeting**, Washington,DC, January 8 – 12, DES DR1 release talk, DES special session.
- 2017 • **Kubecon 2017**, Austin, TX, December 6 – 8.

- **Dark Energy Survey Chicagoland Meeting**, NCSA, Urbana, IL, October 3, contributed talk, LOC.
  - **National Data Service Container Workshop**, NCSA, Urbana, IL, August 17 – 18, invited talk.
  - **DES international collaboration meeting**, University of Chicago, USA, June 12 – 16, contributed talks and demo.
  - **Detecting the Unexpected**, Discovery in the Era of Astronomically Big Data, Space Telescope Science Institute, Baltimore, MD, February 27 – March 2. contributed invited talk and demo
  - **American Astronomical Society 229rd meeting**, Grapevine, TX, January 3 – 7, contributed poster.
- 2016
- **DES international collaboration meeting**, University of Cambridge, UK, December 12 – 16, contributed talk.
  - **Kubecon 2016**, Seattle, WA, November 8 – 9.
  - **University of Chicago/KICP guest lecturer**, Chicago, IL, October 14, invited lecture.
  - **CEFCA Seminar**, CEFCA, Teruel, Spain, October 13, invited webtalk.
  - **Dark Energy Survey Chicagoland Meeting**, Argonne National Lab, Lemont, IL, August 30, contributed talk.
  - **DES international collaboration meeting**, SLAC National Accelerator Laboratory, CA, May 9 – 13, contributed talk and tutorial.
  - **LSST photo-z Workshop**, University of Pittsburgh, Pennsylvania, PA, April 5, contributed talk.
  - **LSST Tech Talk**, LSST, March 22, contributed webtalk.
- 2015
- **Dark Energy Survey Chicagoland Meeting**, NCSA, Urbana, IL, December 10, contributed talk, LOC.
  - **Nebula Openstack users meeting**, NCSA, Urbana, IL, November 11, contributed talk.
  - **LSST Dark Energy Science Collaboration meeting**, Argonne National Lab, Lemont, IL, October 27 – 30, contributed talk.
  - **Dark Energy Survey Chicagoland Meeting**, University of Chicago, IL, September 9, contributed tutorial.
  - **DES international collaboration meeting**, University of Michigan, Ann Arbor, MI, May, 11 – 15, contributed talk and tutorial.
  - **Tools for Astronomical Big Data**, NOAO, Tucson, AZ, March 9 – 11, contributed talk.
  - **DECam Community Science Workshop**, NOAO, Tucson, AZ, March 11 – 13, contributed talk.
  - **Dark Energy Survey Chicagoland Meeting**, Fermilab, Batavia, IL, February 23, contributed tutorial.
- 2014
- **Dark Energy Survey Chicagoland Meeting**, Argonne National Laboratory, Lemont, IL, December 9, contributed talk.
  - **Google Summer of Code summit**, San Jose, CA, October 23 – 26.
  - **LSST Dark Energy Science Collaboration meeting**, Philadelphia, PA, June 17 – 19, contributed talk.
  - **Big Data Workshop**, UIUC, Computational Science and Engineering department, Urbana, May, 28 – 30, invited tutorial/talk.
  - **DES international collaboration meeting**, UIUC/NCSA, Urbana, May, 19 – 23, contributed talk.

- **Laboratório Interinstitucional de e-Astronomia(LIneA) Seminar**, Rio de Janeiro, Brasil, May 8, [invited webinar talk](#).
- 2013 • **LSST Dark Energy Science Collaboration meeting**, Pittsburgh, PA, Dec 3 – 6, [2 contributed talks](#).
- **46th Annual Fermilab Users Meeting**, Fermilab, Batavia, IL, June 12 – 13, [contributed talk on behalf Dark Energy Survey](#).
- **American Astronomical Society 222rd meeting**, Indianapolis, Indiana, June 3 – 6, [contributed poster](#).
- **Computational Science and Engineering Annual Meeting**, UIUC, April, 24 – 25, [contributed talk and poster](#).
- **DES international collaboration meeting**, LBNL, Berkeley, California, April, 8 – 12, [3 contributed talks](#).
- 2012 • **Universidad Catolica de Chile Seminar**, PUC, Santiago, Chile, December 6, [invited talk](#).
- **CTIO Scientific colloquia**, invited NOAO South Visiting Astronomer, CTIO, La Serena, Chile, December 3, [invited talk](#).
- **Astronomical Data Analysis Software and Systems ADASS-XXII**, UIUC, November 4 – 8, [contributed talk](#).
- **Computational Science and Engineering Annual Research Symposium**, UIUC, April, 24, [contributed talk](#).
- 2009 • **SOCHIAS meeting**, Chilean Astronomical Society, Santiago, January, 14 – 16.
- 2008 • **"The Galaxy and its stellar halo: insights on their formation from a hybrid cosmological approach"**, MPA, May, 26.
- **IMPRS seminar**, Max-Planck Institut für Astrophysik, January 22, [contributed talk](#).
- 2007 • **"Modern theories of galaxy formation: methods, aims and limits"**, Max-Planck Institut für extraterrestrische Physik, MPE, Garching, Germany, November 22.
- **"Building Mock catalogues of galaxies"**, Max-Planck Institut für extraterrestrische Physik, October 12, [contributed talk](#).
- **IMPRS seminar**, Max-Planck Institut für Astrophysik, June 21, [contributed talk](#).
- **"The impact of AGN feedback on galaxy formation: theoretical modeling and observational signatures"**, Ringberg Castle, Germany, May 20-26.
- **"SCS PIRE Summer School on the Large Scale Structure-CMB connection"**, Universidad Católica de Chile (PUC), March 19, [contributed poster](#).
- 2006 • **"Studying galaxy formation and evolution with semi-analytic models"**, MPA, March 11.
- **"XIII IAGUSP Advanced School of Astrophysics and the LENAC special session"**, Foz do Iguazu, Brasil, April 6, [contributed talk](#).
- 2005 • **Latin American Astronomy School**, ESO, Chile, December, 8-10, [contributed poster](#).

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## Publications

### All Publications

Metrics [Total publications: 474](#), [citations: >30,000](#), [h-index: 89](#), [i10-index: 333](#), [i100-index: 58](#)

Links [ADS link to all publications](#), [Google Scholar Profile](#)

### Selected publications

- **Matias Carrasco Kind**, “*Scalable Research Infrastructure in a Business School Context: A Case Study of the Data Science Research Services*”, [Science Gateways 2023, SG23](#) (2023)
- Joshua Yao-Yu Lin, Sneha Pandya, Devanshi Pratap, Xin Liu, **Matias Carrasco Kind**, “*AGNet: Weighing Black Holes with Machine Learning*”, [MNRAS, 518, 4921](#) (2023)
- G. Merz, Y. Liu, C. Burke, P. Aleo, X. Liu, **M. Carrasco Kind**, et al., “*Detection, instance segmentation, and classification for astronomical surveys with deep learning (DEEPDISC): DETECTOR2 implementation and demonstration with Hyper Suprime-Cam data*”, [MNRAS, 526, 1122](#) (2023)
- Sahand Hariri, **Matias Carrasco Kind**, Robert J. Brunner, “*Extended Isolation Forest*”, [arXiv e-prints:1811.02141, IEEE TKDE, 2019, vol. 33, 1479](#) (2021)
- Alex Gagliano, Gautham Narayan, Andrew Engel, **Matias Carrasco Kind**, “*GHOST: Using Only Host Galaxy Information to Accurately Associate and Distinguish Supernovae*”, [ApJ, 908, 170](#) (2021)
- T. M. C. Abbott, F. B. Abdalla, S. Allam, A. Amara, J. Annis, et al. (Corresponding author: **M. Carrasco Kind**), “*The Dark Energy Survey: Data Release 2*”, [ApJS, 255, 20](#) (2021)
- Brandon Buncher, Awshesh Nath Sharma, **Matias Carrasco Kind**, “*Survey2Survey: A deep learning generative model approach for cross-survey image mapping*”, [MNRAS, 503, 777](#) (2021)
- I. Sevilla-Noarbe, K. Bechtol, **M. Carrasco Kind**, A. Carnero Rosell, M. R. Becker, et al., “*Dark Energy Survey Year 3 Results: Photometric Data Set for Cosmology*”, [ApJS, 254, 24](#) (2021)
- Brandon Buncher, **Matias Carrasco Kind**, “*Probabilistic cosmic web classification using fast-generated training data*”, [MNRAS, 497:5041-5060](#) (2020)
- **M. Carrasco Kind**, M. Zurauskas, A. Alex, et al., “*flimview : A software framework to handle, visualize and analyze FLIM data*”, [F1000Research 2020, 9:574](#) (2020)
- **M. Carrasco Kind**, Alex Drlica-Wagner, Audrey Koziol, Don Petravick, “*easyaccess: Enhanced SQL command line interpreter for astronomical surveys*”, [The Journal of Open Source Software, 4:1022](#) (2019)
- **M. Carrasco Kind**, “*Searching for similarities and anomalies in a pool of galaxy images*”, [Artificial Intelligence for Data Discovery and Reuse](#), (2019)
- T. M. C. Abbott, F. B. Abdalla, S. Allam, A. Amara, J. Annis, et al. (Corresponding author: **M. Carrasco Kind**), “*The Dark Energy Survey: Data Release 1*”, [ApJS, 239:18](#) (2018)
- E. Morganson, R. A. Gruendl, F. Menanteau, **M. Carrasco Kind**, Y.-C. Chen, et al., “*The Dark Energy Survey Image Processing Pipeline*”, [PASP, 130:074501](#) (2018)
- S. Hariri, **M. Carrasco Kind**, “*Batch and Online Anomaly Detection for Scientific Applications in a Kubernetes Environment*”, [Proceedings of the 9th Workshop on Scientific Cloud Computing](#), (2018)
- W. Yu, **M. Carrasco Kind**, R. J. Brunner, “*Vizic: A Jupyter-based interactive visualization tool for astronomical catalogs*”, [Astronomy and Computing, 20:128-139](#) (2017)
- J. Asorey, **M. Carrasco Kind**, I. Sevilla-Noarbe, R. J. Brunner, J. Thaler, “*Galaxy clustering with photometric surveys using PDF redshift information*”, [MNRAS, 459:1293-1309](#) (2016)



- Edward J. Kim, Robert J. Brunner, **Matias Carrasco Kind**, “*A hybrid ensemble learning approach to star-galaxy classification*”, [MNRAS, 453:507-521](#) (2015)
- **Matias Carrasco Kind**, “*Probabilistic Photometric Redshifts In The Era Of Petascale Astronomy*”, [PhD Thesis](#) (2015)
- C. Sánchez, **M. Carrasco Kind**, H. Lin, R. Miquel, F. B. Abdalla, et al., “*Photometric redshift analysis in the Dark Energy Survey Science Verification data*”, [MNRAS, 445:1482-1506](#) (2014)
- **Matias Carrasco Kind**, RobertJ. Brunner, “*Exhausting the information: novel Bayesian combination of photometric redshift PDFs*”, [MNRAS, 442:3380-3399](#) (2014)
- **Matias Carrasco Kind**, RobertJ. Brunner, “*Sparse representation of photometric redshift probability density functions: preparing for petascale astronomy*”, [MNRAS, 441:3550-3561](#) (2014)
- **Matias Carrasco Kind**, Robert J. Brunner, “*SOMz: photometric redshift PDFs with self-organizing maps and random atlas*”, [MNRAS, 438:3409-3421](#) (2014)
- **M. Carrasco Kind**, R. J. Brunner, “*Implementing Probabilistic Photometric Redshifts*”, [ASPC, 475, 69C](#) (2013)
- **Matias Carrasco Kind**, RobertJ. Brunner, “*TPZ: photometric redshift PDFs and ancillary information by using prediction trees and random forests*”, [MNRAS, 432:1483-1501](#) (2013)

### Books and Thesis

- **Carrasco Kind, M.**, 2014, “*Probabilistic Photometric Redshifts in the era of petascale astronomy*”, Ph.D. Thesis, University of Illinois at Urbana Champaign
- **Carrasco Kind, M.**, White S. & Barrientos, F., 2006, “*Spatial distribution and formation times of dark matter halos from the Millenium simulation*”, B.S. Thesis, Pontificia Universidad Catolica de Chile
- “*Fisica 3*”, ed. Santillana, Chile, 2010 (Book Reviewer and Chapter Co-Author)
- “*Quimica 4*”, ed. Santillana, Chile, 2011 (Book Reviewer and Scientific Advisor)