Bakhtiyar Ruzybayev

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| **EDUCATION** | | |
| **PhD in Physics and Astronomy**  Field: Experimental High Energy Particle Physics  University of Delaware, Newark, Delaware, USA  Date awarded: January, 2013  CGPA: 3.41/4.00 | **Masters of Education in Physics Education**  Middle East Technical University, Ankara, Turkey  Date awarded: June, 2005  CGPA: 3.37/4.00 | **Bachelor of Science in Physics**  Middle East Technical University, Ankara, Turkey  Date awarded: June, 2005  CGPA: 3.50/4.00 |
| **Data Science Specialization,** Coursera certificates  **Analytics: Optimizing Big Data Certificate,** University of Delaware, Fall 2013  **Business Analyst Certificate,** University of Delaware, Spring 2014 | | |
| **EXPERIENCE** **Principal Data Analyst, Capital One (2014-present)**   * Horizontal Analytics * Implementation and transition to Hadoop Big Data platform * Instructorship for Python, Big Data foundation classes * Fuzzy string matching for Anti Money Laundering analysis * Machine learning with python: clustering, support vector machines * Investigation of new tools: D3JS, Network graphs, Sentiment Analysis | | |
| **Post-Doctoral Fellow / Research Assistant**  **University of Delaware, IceCube South Pole Neutrino Detector (2006-2014)**   * Development and production of analysis tools, software modules to process data and reconstruct physical phenomena. Implemented environmental corrections in the reconstruction software. Increased fraction of reconstructed (used) events from 96% to 99.9% . * **Data mining**, Neural Networks, Chemometrics, Principal Component Analysis, Partial Least Squares, Regression. * Monte Carlo simulations and numerical methods. * Debugging long codes (several thousands of lines). * Processing large (several terabytes) amounts of data. * Working on large computer clusters. * Working in a large collaboration of nearly 250 people from 39 institutions in 11 countries. * Writing technical documentation and presenting results. * Deployment of IceCube detector at the geographical South Pole, Amundsen-Scott South Pole Station. | | |
| **Teaching**   * Teaching assistant for lab and discussion sections, Physics 201 (Introductory physics). University of Delaware, Department of Physics and Astronomy. (2005-2006) * Intern physics teacher at Dr. Binnaz Ege - Dr. Ridvan Ege Anatolian High School, Ankara, Turkey. (February – May, 2005) * Intern physics teacher at METU College, Ankara, Turkey. (February – May, 2004) * Intern physics teacher at Haci Omer Tarman Anatolian High School, Ankara, Turkey. (October – December, 2003) | | |
| **HONORS** | | |
| * National Science Foundation **Antarctica Service Medal**. (2012) * **Honor Roll**, Department of Physics, Middle East Technical University (2001-2005) * **Honor Roll**, Department of Secondary Science and Math Education * Middle East Technical University (2001-2005) * **Ranked first** at the department of Secondary Science and Math Education in the class of 30 students. (2002, 2004) * "Altyn Belgi" (**Golden diploma/medal**). High School graduation with honors, Summa Cum Laude. Top 1% nationwide. (2000) | | |
| **COMPUTER SKILLS**  Python, R, Hadoop, MapReduce, Spark, Hive, Impala, SQL,  D3JS, SAS JMP, MATLAB, C++ | | |
| **LANGUAGES**  English, Russian, Turkish, Kazakh, Uighur | | |
| **PUBLICATIONS** | | |
| Primary Author   1. IceCube Collaboration: M.G. Aartsen et al*, “Measurement of the Cosmic Ray Energy Spectrum with IceTop-73”,* **Physical Review D** 88, 042004, 2013   Major contributions   1. IceCube Collaboration: M.G. Aartsen et al, *“Search for Galactic PeV Gamma Rays with the IceCube Neutrino Observatory”,* **Physical Review D** 87, 062002, 2013 2. IceCube Collaboration: R. Abbasi et al, “*IceTop: The Surface Component of IceCube”,* **Nuclear Instruments and Methods** A700, 188-220, 2013 3. IceCube Collaboration: R. Abbasi et al, “*Observation of Cosmic Ray Anisotropy with the IceTop Air Shower Array”,* **Astrophysical Journal** 765, 55, 2013 4. IceCube Collaboration: R. Abbasi et al, “*All-Particle Cosmic Ray Energy Spectrum Measured with 26 IceTop Stations”,* **Astroparticle Physics** 44, 40-58, 2012 5. IceCube Collaboration: R. Abbasi et al, “*Cosmic Ray Composition and Energy Spectrum from 1-30 PeV Using the 40-String Configuration of IceTop and IceCube”,* **Astroparticle Physics** 42, 15-32, 2013   Co-author of 90+ papers of the IceCube collaboration. | | |
| **PRESENTATIONS** | | |
| * “*Cosmic Ray Anisotropy Workshop*”, Madison, Wisconsin, USA, September 26-29, 2013 * “*13th International Conference on Topics in Astroparticle and Underground Physics*”, Asilomar, California, USA, September 8-13, 2013 * “*33rd International Cosmic Ray Conference*”, Rio de Janeiro, Brazil, July 2-9, 2013 * “*18th International School of Cosmic Ray Astrophysics*”, Erice, Sicily Italy, July 4-12, 2012 * “*American Physical Society Meeting*”, Atlanta, Georgia, USA, April 1-3, 2012 * “*31st International Cosmic Ray Conference*”, Łódź, Poland, July 7-15, 2009 | | |