

# Femin Yalcin Kucukbayrak, Ph.D.

## Curriculum Vitae

Izmir Katip Celebi Universitesi  
Havaalani Sosesi No:33/2  
Balaticik, 35620 Cigli, Izmir  
☎ +90(232)3293535  
✉ [femin.yalcin@ikcu.edu.tr](mailto:femin.yalcin@ikcu.edu.tr)  
🌐 [www.feminyalcin.com](http://www.feminyalcin.com)  
✉ [feminyalcin@gmail.com](mailto:feminyalcin@gmail.com)



ORCID: 0000-0003-0602-9392    Web of Science Researcher ID: N-9138-2015    Google Scholar ID: kLOtEPsAAAAJ

### Personal Information

date of birth 20.02.1987  
place of birth Izmir/Turkey  
marital status Married

### Academic Positions

- 2017–present **Associate Professor**, *Izmir Katip Celebi University, Turkey*, Faculty of Engineering and Architecture, Department of Engineering Sciences.
- 2015–2017 **Assistant Professor**, *Izmir Katip Celebi University, Turkey*, Faculty of Engineering and Architecture, Department of Engineering Sciences.
- 2015–2015 **Post-doctoral Fellow**, *University of Toronto, Canada*, Dalla Lana School of Public Health, Division of Biostatistics.
- 2015–2015 **Post-doctoral Researcher**, *University of Piraeus, Greece*, School of Finance and Statistics, Department of Statistics and Insurance Science.
- 2013–present **Part-time Lecturer**, *Izmir University of Economics, Turkey*, Faculty of Arts and Sciences, Department of Mathematics.
- 2009–2013 **Research Assistant**, *Izmir University of Economics, Turkey*, Faculty of Arts and Sciences, Department of Mathematics.

### Administrative Duties

- 2018–present **Faculty of Engineering and Architecture Administrative Board Delegate**, *Izmir Katip Celebi Univ.*  
Associate Professor Delegate
- 2017–present **Head of the Department of Applied Mathematics and Statistics**, *Izmir Katip Celebi Univ.*
- 2017–present **Statistical Consultancy Assessment and Evaluation Research and Application Center Board Member**, *Izmir Katip Celebi Univ.*
- 2017–2017 **Vice Dean of Faculty of Engineering and Architecture**, *Izmir Katip Celebi Univ.*
- 2017–2017 **Faculty of Engineering and Architecture Administrative Board Delegate**, *Izmir Katip Celebi Univ.*  
Assistant Professor Delegate

### Education

- 2019–present **Ph.D.**, *Dokuz Eylul University, Izmir, Turkey*, ongoing.  
Cancer Epidemiology
- 2009–2013 **Ph.D.**, *Izmir University of Economics, Izmir, Turkey*, 3.96/4.00.  
Applied Mathematics and Statistics
- 2005–2009 **B.Sc.**, *Izmir University of Economics, Izmir, Turkey*, 3.65/4.00.  
Mathematics

### Ph.D. Thesis

- title *Distribution theory of runs and run-related statistics in sequences of dependent trials*
- supervisors Prof. Ismihan Bayramoglu (Izmir University of Economics, Izmir, Turkey)  
Prof. Serkan Eryilmaz (Atilim University, Ankara, Turkey)

## Research Interests

- Applied Probability
- Biostatistics
- Data Science
- Probability Theory
- Bioinformatics
- Machine Learning

## Publications

A. Tetik-Vardarli, L. Pelit, C. Aldag, K. Korba, C. Celebi, T. N. Dizdas, U. C. Uzun, E. Tayfur, A. Aykut, H. S. Karakus, E. Baysal, O. Goksel, F. Pelit, **F. Yalcin**, F. N. Ertas, Y. Basbinar, A. Veral, C. Gunduz, and T. Goksel, *Concordance in molecular genetic analysis of tumour tissue, plasma, and exhaled breath condensate samples from lung cancer patients*. Journal of Breath Research 14(3): 036001, 2020 (SCI).

S. Eryilmaz and **F. Yalcin**, *Discrete Scan Statistics Generated by Dependent Trials and Their Applications in Reliability*. In: Glaz J., Koutras M. (eds) *Handbook of Scan Statistics*. Springer, New York, NY, 2020 (Book Chapter).

**F. Yalcin**, S. Eryilmaz, and A. R. Bozbulut, *A generalized class of correlated run shock models*. Dependence Modeling 6(1): 131-138, 2018 (ESCI).

C. Franko and **F. Yalcin**, *Signatures of series and parallel systems consisting of non-disjoint modules*. Communications in Statistics – Theory and Methods 46(23): 11425-11439, 2017 (SCI).

G. Eskiizmir, Y. Baskin, **F. Yalcin**, H. Ellidokuz, and R. L. Ferris, *Risk factors for radiation failure in earlystage glottic carcinoma: A systematic review and meta-analysis*. Oral Oncology 62: 90-100, 2016 (SCI).

V. M. Koutras, M. V. Koutras, and **F. Yalcin**, *A simple compound scan statistic useful for modeling insurance and risk management problems*. Insurance Mathematics and Economics 69: 202-209, 2016 (SCI).

V. M. Koutras, M. V. Koutras, and **F. Yalcin**, *A Compound Scan Statistic Distribution with Applications in Risk Management*. In: Karagrigoriou, A., Oliveira T., Skiadas C.H. (eds) *Statistical, Stochastic and Data Analysis Methods and Applications*. The International Society for the Arts, Sciences and Technology (ISAST), 2015 (Book Chapter).

E. Akbulut, A. Erdemir, M. Ozgen, Y. Baskin, **F. Yalcin**, and D. Turgut-Balik, *Genotyping and analysis of rs27037 polymorphism for ankylosing spondylitis*. Sigma Journal of Engineering and Natural Sciences 6(1): 117-125, 2015 (ESCI).

**F. Yalcin** and S. Eryilmaz, *q-geometric and q-binomial distributions of order k*. Journal of Computational and Applied Mathematics 271(1): 31-38, 2014 (SCI).

**F. Yalcin**, *On a generalization of Ling's binomial distribution*. Istatistik: Journal of the Turkish Statistical Association 6(3): 110-115, 2013.

**F. Yalcin** and S. Eryilmaz, *Start-up demonstration test based on total successes and total failures with dependent start-ups*. IEEE Transactions on Reliability 61(1): 227-230, 2012 (SCI).

S. Eryilmaz and **F. Yalcin**, *On the mean and extreme distances between failures in Markovian binary sequences*. Journal of Computational and Applied Mathematics 236(6): 1502-1510, 2011 (SCI).

S. Eryilmaz and **F. Yalcin**, *Distribution of run statistics in partially exchangeable processes*. Metrika 73(3): 293-304, 2011 (SCI).

## Submitted Publications

**F. Yalcin** and C. Franko, *Computing Birnbaum and Barlow-Proschan importance measures using system signature*. Under review.

**F. Yalcin**, *A new component importance measure based on Barlow-Proschan importance*. Submitted.

## Talks and Presentations

A. Tetik-Vardarli, L. Pelit, C. Aldag, K. Korba, C. Celebi, T.N. Dizdas, U.C. Uzun, E. Tayfur, A. Aykut, H.S. Karakus, E. Baysal, O. Goksel, F. Pelit, **F. Yalcin**, F.N. Ertas, Y. Basbinar, A. Veral, C. Gunduz, and T. Goksel. *Akciger kanserinde tumor doku, plazma ve ekshale soluk kondensat orneklerinin molekuler genetik analizindeki uyum*. 6. Ege Hematoloji Onkoloji Kongresi (EHOK 2020), Radisson Blu Resort and Spa Hotel, Izmir, Turkey, March 13-15, 2020.

A. Tetik-Vardarli, L. Pelit, C. Aldag, K. Korba, C. Celebi, T.N. Dizdas, U.C. Uzun, E. Tayfur, A. Aykut, H.S. Karakus, E. Baysal, O. Goksel, F. Pelit, **F. Yalcin**, F.N. Ertas, Y. Basbinar, A. Veral, C. Gunduz, and T. Goksel. Akciger kanserinde yeni saptanan mutasyonlarin klinik korelasyonu. 16. Tibbi Biyoloji ve Genetik Kongresi Uluslararası Katilimli (TBGK 2019), La Blanche Island Resort Hotel, Mugla, Turkey, October 27-30, 2019.

(Invited Talk) **F. Yalcin**. Access and application to genomic databases with Python. 2nd International Cancer Ion Channels Congress (IONCC 2019), Wyndham Grand Ozdilek, Izmir, Turkey, September 22-24, 2019.

(Invited Talk) **F. Yalcin**, C. Kan, and S. Eryilmaz. A new extreme shock model with a change point. Yoneylem Arastirmasi ve Endustri Muhendisligi (YA/EM 2019), Baskent University, Ankara, Turkey, June 12-14, 2019.

**F. Yalcin** and C. Franko. A new method for evaluating the Birnbaum and Barlow-Proschan component importance measures. International Eurasian Conference on Science, Engineering and Technology (EURASIANSCIENTECH 2018), The Ankara Hotel, Ankara, Turkey, November 22-23, 2018.

**F. Yalcin**, S. Eryilmaz, and A.R. Bozbulut. On generalized run shock models. 11th International Statistics Days Conference (ISDC 2018), Kefaluka Resort Hotel, Mugla, Turkey, October 3-7, 2018.

(Invited Talk) **F. Yalcin** and C. Franko. A new component importance measure based on Barlow and Proschan importance. Yoneylem Arastirmasi ve Endustri Muhendisligi (YA/EM 2018), Anadolu University, Eskisehir, Turkey, June 26-29, 2018.

(Invited Talk) **F. Yalcin** and S. Eryilmaz. Systems with weighted components with application to wind energy. 9th International Workshop on Applied Probability (IWAP 2018), Eorvos Lorand University, Budapest, Hungary, June 18-21, 2018.

(Invited Talk) **F. Yalcin**. Bilimsel arastirmalarda SPSS kullanimi. Seminars of Izmir Bozyaka Training and Research Hospital, Izmir Bozyaka Training and Research Hospital Clinic of Infectious Diseases and Clinical Microbiology, Izmir, Turkey, May 2, 2018.

A. Leblebici, A.C. Acara, E. Usta, and **F. Yalcin**. P12-measurement of workload for geriatric patients based on triage codes in emergency departments using simulation. 4th International Researchers, Statisticians and Young Statisticians Congress (IRSYSC 2018), Ilica Hotel Spa & Wellness Thermal Resort Cesme, Izmir, Turkey, April 28-30, 2018. (*Poster Presentation*)

S. Eryilmaz and **F. Yalcin**. Ruzgar ciftligi potansiyelinin guvenilirliğe dayali teorik dagilimi. 4. Izmir Ruzgar Sempozyumu, MMO Tepekule Kongre ve Sergi Merkezi, Izmir, Turkey, September 28-30, 2017.

E. Akbulut, M. Ozgen, **F. Yalcin**, Y. Baskin, and D. Turgut-Balik. Investigating the genetic association between Calsyntenin 3 (CLSTN3) polymorphism with ankylosing spondylitis. 4th International Multidisciplinary Congress of Eurasia (IMCOFE 2017), Sapienza University of Rome, Rome, Italy, August 23-25, 2017.

(Invited Talk) **F. Yalcin**. Reliability properties of a generalized class of shock models. 10th International Conference on Mathematical Methods in Reliability (MMR 2017), Grenoble Institute of Technology, Grenoble, France, July 3-6, 2017.

(Invited Talk) **F. Yalcin**. Some  $q$ -discrete distributions of order  $k$  with applications. 8th International Workshop on Applied Probability (IWAP 2016), Sheraton Centre Toronto Hotel, Toronto, Canada, June 20-23, 2016.

(Invited Talk) **F. Yalcin**. Some  $q$ -discrete distributions of order  $k$  with applications. Seminars of Department of Mathematics, Izmir University of Economics, Izmir, Turkey, May 27, 2016.

(Invited Talk) **F. Yalcin**. Runs and run-related statistics with applications. Biostatistics Seminars of Dalla Lana School of Public Health, University of Toronto, Toronto, Canada, September 29, 2015.

**F. Yalcin**. Some  $q$ -discrete distributions of order  $k$ . 30th European Meeting of Statisticians (EMS 2015), VU University Amsterdam, Amsterdam, the Netherlands, July 6-10, 2015.

E. Akbulut, A. Erdemir, M. Ozgen, Y. Baskin, **F. Yalcin**, and D. Turgut-Balik. rs7743761 associated with disease risk of ankylosing spondylitis in Turkish population. 40th FEBS Congress The Biochemical Basis of Life, Estrel Convention Center, Berlin, Germany, July 4-9, 2015. (*Poster Presentation*)

(Invited Talk) **F. Yalcin**, V.M. Koutras, and M.V. Koutras. A compound scan statistic distribution with applications in risk management. 16th Conference of the Applied Stochastic Models and Data Analysis International Society (ASMDA 2015), University of Piraeus, Piraeus, Greece, June 30-July 4, 2015.

C. Franko and **F. Yalcin**. Signatures of series and parallel systems consisting of non-disjoint modules. 9th International Conference on Mathematical Methods in Reliability (MMR 2015), Tokyo Campus of University of Tsukuba, Tokyo, Japan, June 1-4, 2015.

(Invited Talk) **F. Yalcin** and S. Eryilmaz.  $q$ -discrete distributions of order  $k$ . 7th International Workshop on Applied Probability (IWAP 2014), Lara Kervansaray Hotel & Convention Center, Antalya, Turkey, June 16-19, 2014.

(Invited Talk) **F. Yalcin**. Probabilistic and statistical analysis of start-up demonstration tests. Seminars of Faculty of Engineering and Architecture, Izmir Katip Celebi University, Izmir, Turkey, May 21, 2014.

**F. Yalcin**.  $q$ -distributions of order  $k$  with applications to reliability. 26th European Conference on Operational Research (EURO MMXIII), Sapienza University of Rome, Rome, Italy, July 1-4, 2013.

**F. Yalcin** and S. Eryilmaz. Start-up demonstration tests under dependence. 28th European Meeting of Statisticians (EMS 2010), University of Piraeus, Piraeus, Greece, August 17-22, 2010.

C. Franko, M. Ozkut, and **F. Yalcin**. Different applications of bed capacity planning problem. Yoneylem Arastirmasi ve Endustri Muhendisligi (YA/EM 2008) Student Project Competition, Galatasaray University, Istanbul, Turkey, June 30-July 2, 2008.

**F. Yalcin**. Start-up demonstration tests. Workshop on Statistical Methods in Reliability and Quality, Izmir University of Economics, Izmir, Turkey, June 2, 2008. (*Poster Presentation*)

## Projects

- TUBITAK1003 Subproject Coordinator in "Akciger kanserli hastalarin bireye ozgu molekuler tani ve izleminde likit ve volatil biyopsinin kullanimi (216S590)" (Ongoing)
- TUBITAK1003 Researcher in "Dolasimdaki kanserli hucrelerin (CTCs) mekanik sertlik (cell stiffness) yapisindaki degisimi kantitatif faz goruntuleme yontemi kullanarak olcen holografik tek hucre goruntuleme teknigi (116E866)" (Ongoing)

## Professional Service

- Served as a member of editorial board for the journal Science Journal of Applied Mathematics and Statistics.
- Served as a reviewer for the journals Advances and Applications in Statistics, Annals of the Institute of Statistical Mathematics, Applied Mathematics and Computation, Applied Stochastic Models in Business and Industry, ASTA Advances in Statistical Analysis, Communications in Statistics – Theory and Methods, European Journal of Operational Research, Gazi University Journal of Science, IEEE Transactions on Reliability, IISE Transactions, Journal of Computational and Applied Mathematics, Journal of Probability, Journal of Statistical Theory and Applications, Istatistik: Journal of the Turkish Statistical Association, Methodology and Computing in Applied Probability, Metrika, Part O: Journal of Risk and Reliability, Statistical Papers, Statistics & Probability Letters, and Statistical Papers.
- Served as a member of Local Organizing Committee of IWAP 2014 (Turkey) and IWAP 2016 (Canada).
- Served as a session chair in EMS 2015, MMR 2015, IWAP2016, YAEM2018, and ISDC2018.

## Honors, Awards, and Grants

- 2015 TUBITAK-BIDEB 2224-A International Scientific Meetings Fellowship
- 2015 Post-doctoral Fellowship with a grant of €13840 in the research project "Patterns and Scans Theory in Molecular Biology, Reliability Engineering and Experimental Psychology" funded by the University of Piraeus Research Center (UPRC) and the European Union - European Social Fund (ESF) (Under supervision of Prof. Markos V. Koutras at University of Piraeus)
- 2014 TUBITAK-BIDEB 2219 International Postdoctoral Research Scholarship with a grant of \$10000 for the project "Runs and Patterns and Their Applications to Biological Sequences" funded by The Scientific and Technological Research Council of Turkey (Under supervision of Prof. W. Y. Wendy Lou at University of Toronto)
- 2013 High Honour PhD Graduate of Izmir University of Economics with a GPA of 3.96/4.00
- 2009 TUBITAK-BIDEB 2211-A Domestic PhD Scholarship
- 2009 High Honour Graduate of Izmir University of Economics with a GPA of 3.65/4.00

## Teaching Experience

- undergraduate Probability and Statistics for Engineers (10+ semesters)  
Probability for Engineers (10+ semesters)  
Engineering Statistics / Statistical Methods in Engineering (8 semesters)  
Calculus I (8 semesters)

Applied Linear Algebra / Linear Algebra for Engineers (4 semesters)  
Introduction to Probability Theory (2 semesters)  
Probability and Random Processes (1 semester)  
graduate Applied Statistical Analysis (4 semesters)  
Stochastic Processes (2 semesters)

## Selected 3 Postgraduate Theses

- 2017 "Sağlık sistemlerinde istatistiksel metot destekli süreç değerlendirilmesi: Bir hastane uygulaması" by A. Leblebici.  
2017 "Bir mermer fabrikasındaki makinenin çok kriterli karar verme metodları kullanılarak seçilmesi" by E.Y. Cakil.  
2017 "PVC fabrikası optimizasyonu PVC siyirma kolonu modellemesi ve simülasyonu" by S. Sertdemir.

## Certificates

- "Veri Madenciliği Eğitimi Sertifikası" / "Data Mining Training Certificate" obtained from ODTU-SEM (METU-CEC) in November 2018.
- "Statement of Accomplishment with distinction" obtained from "Statistics in Medicine" course offered by Stanford University (Attended June-September 2014 and completed with a grade of 94%).
- "Pedagojik Formasyon Sertifikası" / "Certificate of Pedagogical Formation" obtained from Dokuz Eylül University Buca Faculty of Education in August 2014.

## Languages

Turkish Mother tongue  
English Advanced - UDS: 92.5/100 (2009), IELTS: 7.5/9.0 (2013), YDS: 90/100 (2017)  
German Pre-intermediate

## Computer Skills

mathematical MATLAB, PTC Mathcad, Wolfram Mathematica  
statistical MedCalc, Minitab, SPSS, Stata  
programming Python, R  
text editing  $\LaTeX$ , MS Office, Scientific Word

## Academic References

research

Prof. Serkan Eryılmaz - *PhD Supervisor*  
Atılım University, Turkey, Vice President  
Faculty of Engineering  
Department of Industrial Engineering  
serkan.eryilmaz@atilim.edu.tr  
+90(312)5868558

Prof. İsmihan Bayramoğlu - *PhD Supervisor*  
İzmir University of Economics, Turkey  
Faculty of Arts and Sciences, Dean  
Department of Mathematics  
ismihan.bayramoglu@ieu.edu.tr  
+90(232)4888139

Prof. W. Y. Wendy Lou - *Postdoc Supervisor*  
University of Toronto, Canada  
Dalla Lana School of Public Health  
Biostatistics Division, Head  
wendy.lou@utoronto.ca  
+1(416)9467804

Prof. Hulya Ellidokuz  
Dokuz Eylül University, Turkey  
Faculty of Medicine  
Department of Biostatistics, Head  
hulya.ellidokuz@deu.edu.tr  
+90(232)4125889

teaching

Prof. Güzde Yazgi Tutuncu Asci  
İzmir University of Economics, Turkey  
Faculty of Arts and Sciences  
Department of Mathematics, Head  
yazgi.tutuncu@ieu.edu.tr  
+90(232)4888478

Assoc. Prof. Alexei Stepanov  
Immanuel Kant Baltic Federal University, Russia  
Institute of Applied Mathematics and Informatics  
Senior Researcher  
alexeistep45@mail.ru  
+7(401)2533847