Ceren Burçak Dağ

Teşvikiye mah. Hostes Rona Altınay sok.
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EDUCATION

Istanbul Technical University - Maslak, Istanbul Turkey

- *BSc* Electronics and Communications Engineering 2010 - 2014 (expected)
- *BSc* Physics 2011 - 2015 (expected)
  - SPIE Optics and Photonics Education Scholarship 2014
  - Siemens Future Professionals 2011 Scholarship
  - Total GPA: 3.92 Dean's High Honour List

University of Waterloo - Waterloo, ON, Canada

- Undergrad exchange student in ECE Dept. of Eng. School Jan-Sept 2014

Feyziye Mektepleri Vakfı Işık Lisesi - Tesvikiye, Istanbul Turkey

- High school science diploma 2005 - 2010
  Academic scholarship
  Valedictorian

The Associated Board of the Royal Schools of Music (ABRSM)

- Flute Grade 6 2014
- Music Theory Grade 5 2013

THESES

Engineering BSc. Thesis
A Readout Method for a Flux Qubit-Resonator System in the Ultrastrong Coupling Regime

- performed in Institute for Quantum Computing (IQC) in Univ. of Waterloo, CA; submitted to Electrical and Electronics Faculty of Istanbul Technical Univ. in 2014.
- Supervisors: Dr. Pol Forn-Diaz and Prof. Chris Wilson.

INTERNSHIP EXPERIENCE

Quantum Computing and Devices Research Group June - Sep 2013
Aalto University, Micronova, Espoo, Finland.

- *Theoretical quantum gate design with microwave photons. She improved the inductance model and LC model of Quantum Tunable Phase Shifter with SQUIDs with Adj. Prof. Mikko Möttönen.*

ITU VLSI Laboratories August-Sep 2012:Jan-May 2013
Istanbul Technical University, Electrical and Electronics Faculty, Maslak, Istanbul Turkey

- *C Computation of an isolated word speech recognition system with Bayesian classification techniques and Hidden Markov Models with Asst. Prof. Türker Kuyel.*

Microphotonics Research Laboratory
Koç University, Sarıyer, Istanbul Turkey

- *COMSOL Electromagnetic Simulations of a device based on silicon microspheres.* June - July 2012
- *Undergraduate Summer Research Program* June - September 2011

Institute of Physics, Polish Academy of Sciences October 2009
Warsaw, Poland

- *The fundamentals of superconductivity with Prof. Andrzej Wisniewski*

RESEARCH PROJECTS

Analytics of the Readout Method for a Flux Qubit-Resonator System in the Ultrastrong Coupling Regime
with Prof. Özgür Müstecaplıoğlu in Koç University **Since Sept. 2014**

- *A continuation of the theoretical circuit-QED and quantum systems research with the collaboration of Wilson group in IQC, (expected to be a part of the physics thesis). Working out the analytical expression of the readout system. Exploring readout-qubit possibility as an alternative to readout-resonator possibility due to the experimental convenience. Also studying open quantum systems in order to implement the readout system as an open system in the future.*

Novel Distributed Feedback Lightwave Circuit Elements
with Prof. Ali Serpengüzel in Microphotonics RL. **Since Sept. 2012**

- *She worked on the theory of the device and designed a numerical simulation platform on MATLAB Simulink. Manuscript submitted to IEEE JLT, working on the conference paper which is accepted by SPIE Photonics West OPTO.*

Relativistic Cosmology **Jan-May 2013**
with Asst. Prof. Vakıf Kemal Önemli

- *She studied the early universe cosmology with the references of Dodelson's* Modern Cosmology, *Reiden's* Introduction to Cosmology *and Bernstein's* An Introduction to Cosmology.

Orbit Determination of Asteroid 1019 Strackea **Summer 2009**
in Summer Science Program, New Mexico Institute of Technology and Mining, NM USA

- *The orbit of NEA 1019 Strackea is determined with the observations done in Etscorn Observatory (NM, IAU code: 719). The orbital elements are found with Gaussian Orbit Determination Method coded in Python programming language.*

AWARDS

Stockholm Junior Water Prize 2009

- *Rain as an Alternative Clean Energy Source*
  The mechanical energy of raindrops with different sizes are converted into the electrical energy via piezoelectricity. The affecting factors are determined.

First Step to Nobel Prize in Physics 2009

- *Experimental Determination of the Diffusion Rates of Soft Gels Drying At Different Temperatures and pH*
  The drying diffusion rates are experimentally obtained for a range of pH and temperature with soft-gel capsules and the results are statistically analyzed.

TUBITAK Science Fair Mention Award in Mathematics 2007

- *Butterfly Theorems*
  The geometrical proofs of Butterfly Theorem in circles, trapezoid, parallelogram and generalized rectangles.

FMV Yusuf Ziya High Achievement Award in Mathematics 2010

National Philosophy Olympiads, Best 4^{th} Essay 2009

- *"The Hindrances in Education and The Evolution of Hindrances"*

CONFERENCE PROCEEDINGS

SPIE Photonics West OPTO **7-13 Feb. 2015**
Ceren B. Dağ, Mehmet A. Anıl and Ali Serpengüzel
"Novel Distributed Feedback Lightwave Circuit Elements"

PUBLICATIONS

IEEE Journal of Lightwave Technology **accepted in 4^{th} Dec., 2014**
Ceren B. Dağ, Mehmet A. Anıl and Ali Serpengüzel
"Meandering Waveguide Distributed Feedback Lightwave Circuits"

SEMINARS

Koç University GSSE Physics Seminar Series **7 Nov. 2014**
Ceren B. Dağ
"Theoretical design of a readout system for the Flux Qubit-Resonator Rabi Model in the ultrastrong coupling regime"

ATTENDED CONFERENCES & SCHOOLS

Undergrad School on Experimental Quantum Information Processing (USEQIP) **26 May-6 June 2014**

- *Institute for Quantum Computing, Waterloo, Canada*

Introduction to Quantum Systems and Devices **11-14 June 2013**

- *Espoo, Finland*

Nesin Mathematics Village **2-15 August 2010**

- *Sirince, Izmir Turkey*

Junior Scientists Symposium **12 October 2009**

- *Orange County Convention Center Orlando, Florida USA*

European Youth Water Summit **17-18 March 2010**

- *European Parliament, Brussels*

Summer Science Program **June-July 2009**

- *New Mexico Institute of Tech., Socorro, NM.*

SKILLS

Laboratory Skills

- *Usage of spectrometer, vector analyser, taking IV test, basic optical setup design*

Programming Languages

- *C, C++, MATLAB, Python, Fortran*

Symbolic Languages

- *Mathematica*

Simulation Programs

- *COMSOL (electromagnetic simulations), LTSpice and QUCS (circuit simulations)*

Languages

- *Turkish: native*
- *English: advanced*
  - TOEFL IBT, scored as 111 3 February 2012
- *German: B1*

SOCIETY MEMBERSHIPS

SPIE Since 2012
IEEE Since 2013

INTERESTS

Music and flute playing
Screenplay and creative writing
Science fiction
Working out how to improve the understanding of the science fiction in Turkish Literature and society with her articles and sci-fi stories

Thinking and reading about the belief mechanism in mind and the formation of different socio-economical systems
Astronomy
Brain and neurology
Criminalistics and watching detective movies
Ice-skating