

# BURAK KARA

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Rennes, France

## SUMMARY

Associate Software Architect at Synamedia and a Ph.D. candidate at Inria, specializing in cutting-edge research on Green Video Streaming, focusing on designing innovative video streaming solutions. With four years of experience in the video streaming domain, Burak has honed expertise in video delivery and CDN architecture. His commitment lies in synergizing academic insights and industry knowledge to spearhead innovation and deliver cutting-edge solutions.

## EXPERIENCE

**Associate Software Architect** Mar 2023 – Present ◦ 1 year  
Synamedia [🔗](#) Rennes, France

- Architected and developed extensions on top of Content Steering Standard for IBC'23, NAB'24, and ACM MMSys'24.
- Actively engaged with industry trends by following and attending SVTA (Players and Playback WG), CTA (Streaming Media Tracing), and Greening of Streaming (GoS).
- Researched on Green Video Streaming (Analysis, Evaluation, and Modeling) as a Ph.D. Student - CIFRE.
- Contributed to three conference papers and one patent filing.
- Tech: Python · Typescript - JavaScript · Next.js - React · Docker, ·Kafka · Proxmox · AWS · Latex

**Software Engineer** Oct 2022 – Mar 2023 ◦ 6 months  
Parasut [🔗](#) Remote – Istanbul, Turkiye

- Developed and improved outbound invoice experience for 50K+ users.
- Tech: Ruby on Rails · Ember.js · CI/CD

**Associate Software Engineer** Jun – Aug 2022 ◦ 3 months  
Trendyol [🔗](#) Remote – Istanbul, Turkiye

- Developed and improved seller store products for 200K+ sellers.
- Tech: NestJs · React · React Native · Typescript · Jest · SASS · CI/CD

**Master Thesis Student** May 2020 – Sep 2022 ◦ 2 years 5 months  
Nokia [🔗](#) & Ozyegin University [🔗](#) Remote – Istanbul, Turkiye

- Worked on projects granted by Nokia on 360-degree video streaming.
- Introduced head motion-aware viewport margins to enhance QoE in 360-degree video streaming with OMAF v1 and v2.
- Invented and evaluated head motion-aware objective QoE metric. Benchmarked and evaluated OMAF v2.
- Contributed to four conference papers, one journal paper, and three patent filings.
- Tech: C++ · Python · R · Latex · Research
- TA for courses: OOP · Networked Multimedia · Computer Networks · Contemporary Topics in Networking

## EDUCATION

**Ph.D. in Computer Science**, Inria & Université de Rennes 2023 – 2026

**Thesis:** Towards Green Video Distribution: Modeling, Evaluation, and Regulation

**Co-Supervisor:** Bruno Tuffin (Inria) [🔗](#)

**Co-Supervisor:** Gwendal Simon (Synamedia) [🔗](#)

Industry & Academia Ph.D. program (CIFRE)

**M.Sc. in Computer Science**, Ozyegin University 2020 – 2022

**Thesis:** Enhancement of 360-Video Experience during Head Motion **Supervisor:** Ali C. Begen [🔗](#) **GPA:** 3.96 / 4.00

Project granted by Nokia and Ozyegin University on 360-degree Video Streaming.

**B.Sc. in Computer Science**, Ozyegin University 2015 – 2020

**Thesis:** HTTP Adaptive Streaming over Multiple Network Interfaces **Supervisor:** Ali C. Begen [🔗](#) **GPA:** 3.62 / 4.00

## JOURNAL & MAGAZINE PUBLICATIONS

Could Head Motions Affect Quality When Viewing 360-Degree Videos?, *Burak Kara, Mehmet N. Akcay, Ali C. Begen, Saba Ahsan, Igor D.D. Curcio, and Emre Aksu*, IEEE MultiMedia '22, DOI: [10.1109/MMUL.2022.3215089](https://doi.org/10.1109/MMUL.2022.3215089)

## CONFERENCE PUBLICATIONS

Power Efficient Multi-CDN Communication over Content Steering Server, *Burak Kara and Gwendal Simon*, ACM MMSys '24, DOI: [10.1145/3625468.3652196](https://doi.org/10.1145/3625468.3652196)

Dynamic Content Steering Services: How to Make Everyone Happy in a Multi-CDN World, **Burak Kara** and **Gwendal Simon**, ACM MHV '24, DOI: [10.1145/3638036.3640252](https://doi.org/10.1145/3638036.3640252)

Studying Green Video Distribution as a Whole, **Burak Kara**, **Gwendal Simon**, **Bruno Tuffin**, **Jerome Vieron** and **Ali C. Begen**, ACM GMSys '23, DOI: [10.1145/3593908.3593944](https://doi.org/10.1145/3593908.3593944)

Quality Upshifting with Auxiliary I-Frame Splicing, **Mehmet N. Akcay**, **Burak Kara**, **Ali C. Begen**, **Saba Ahsan**, **Igor D.D. Curcio**, **Kashyap Kammachi-Sreedhar** and **Emre Aksu**, QoMEX '23, DOI: [10.1109/QoMEX58391.2023.10178447](https://doi.org/10.1109/QoMEX58391.2023.10178447)

Benchmarking the Second Edition of the Omnidirectional Media Format Standard, **Burak Kara**, **Mehmet N. Akcay**, **Ali C. Begen**, **Saba Ahsan**, **Igor D.D. Curcio**, **Kashyap Kammachi-Sreedhar** and **Emre Aksu**, IEEE ISM '22, DOI: [10.1109/ISM55400.2022.00038](https://doi.org/10.1109/ISM55400.2022.00038)

Rate-adaptive Streaming of 360-degree Videos with Head-motion-aware Viewport Margins, **Mehmet N. Akcay**, **Burak Kara**, **Saba Ahsan**, **Ali C. Begen**, **Igor D.D. Curcio** and **Emre Aksu**, IEEE MIPR '22, DOI: [10.1109/MIPR54900.2022.00056](https://doi.org/10.1109/MIPR54900.2022.00056)

Head-Motion-Aware Viewport Margins for Improving User Experience in Immersive Video, **Mehmet N. Akcay**, **Burak Kara**, **Saba Ahsan**, **Ali C. Begen**, **Igor D.D. Curcio** and **Emre Aksu**, ACM MMAsia '21, DOI: [10.1145/3469877.3490573](https://doi.org/10.1145/3469877.3490573)

HTTP Adaptive Streaming over Multiple Network Interfaces, **Burak Kara**, **Sarp Ozturk**, and **Ali C. Begen**, ACM MMSys '20, DOI: [10.1145/3339825.3393588](https://doi.org/10.1145/3339825.3393588)

## PATENTS

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Multi-CDN Communication over Content Steering Server, Filled in late 2023.

Splicing Frames To Reduce Discarded Data In Adaptive Segmented Media, Filled in early 2023.

A Method, an Apparatus and a Computer Program Product for Media Streaming of Immersive Media, 2023, WO2023194648A1.

A Method, an Apparatus and a Computer Program Product for Video Encoding and Video Decoding, 2022, WO2022248763.

## THESIS

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Towards Green Video Distribution: Modeling, Evaluation, and Regulation, **Burak Kara**, thesis.fr, <https://www.theses.fr/en/s365587> - In progress

Enhancement of 360-Video Experience during Head Motion, **Burak Kara**, YOK Thesis Center - Master's Thesis, [10.13140/RG.2.2.33341.74722](https://doi.org/10.13140/RG.2.2.33341.74722)

## HONORS & AWARDS

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**TUBITAK** TR National M.Sc. Merit Scholarship (2020 – 2022)

**Vodafone Digital Pioneers** – **TobiHack** 2020 Hackathon winner among 42 participants

**Ozyegin University** 100% Merit Scholarship – Bachelor & Master Degree (2015 – 2022)

## MISC

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### Languages

- English - Professional proficiency
- French - Beginner
- Turkish - Native

## REFERENCE

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Available upon request.