# Krzysztof Piecuch, M.Sc.

+44 (0) 754 320 5918 - piecuch@kpiecuch.pl - London, UK

I have been a DevOps engineer focusing on Kubernetes and low-level infrastructure in a high-frequency trading company for the last two years. I excel at independent work as demonstrated by fixing <u>complicated bugs</u> with little management but am always willing to share and hear ideas from other people. I am looking for a DevOps/SRE position with a lot of growth potential focusing on Linux or BSD ecosystems.

# **Employment History**

#### 06-2018 - now Gambit Research, DevOps

- Deep understanding of Kubernetes gained by maintaining 3 clusters including fixing 3 single points of failure and introducing static core affinity for low-latency workloads
- Improved performance of 25 business-critical servers by up to 30% by debugging and fixing the clocksource calibration algorithm in <u>the Linux kernel</u>
- Expertise in Apache Kafka obtained by maintaining 3 clusters, fixing ZooKeeperrelated single point of failure, and increasing cluster storage tenfold while decreasing chances for data loss
- High cross-functional and communication skills proven by being the most often asked for help in the company as evidenced by the karma system (two times more karma than #2 person in the rating)
- Deep understanding of bare-metal Linux installations and container systems gained by managing over 100 bare-metal servers, 300 LXCs, most of which running Docker-in-LXC
- Ensured security of the system and reduced maintenance costs by coordinating and performing major OS upgrade and replacing LVM with ZFS on over 60 servers, resulting in uniform environment across servers
- Experience in code hosting and CI management, including security assessment gained by maintaining, securing, and modernizing on-premise GitLab installation
- Basic experience of AWS gained when managing ~20 ECC instances
- Significantly improved server security by performing an audit and configuring new set of bastion hosts
- Experience with Ansible gained by managing over 120 playbooks

# 01-2018 - 06-2018 Gambit Research - Backend Software Developer

- Reduced human-error rate by tailoring business monitoring system messages and displaying data in the most appropriate format
- Increased availability and responsiveness of a Python application used for stopping trading in critical moments by tracing 5 distinct memory leaks
- Developed Python monitoring applications listening to real-time event streams. Deployed these to Kubernetes.
- Programmed cronjobs querying recent database entries for monitoring purposes

# 09-2015 - 09-2019 University of Warsaw - Research Assistant

- Developed a scheduler to optimize CPU, memory and swap usage for testing program using exponential time and memory
- Created a webpage demo with research results
- Co-authored an <u>article published in Nature Communications</u>

#### 08-2014 - 10-2014 Innotion - Java Software Developer

- Designed and developed code synchronizing client's and on-premise database for internal tool
- Client-facing experience gained through interviewing a client for database schema design and documentation

# Education

#### 2015-2017 M.Sc. in Computer Science - University of Warsaw - Top 1 University in Poland

- Courses taken: compiler construction, advanced probability, parallel and concurrent programming, computational complexity and 19 other courses
- 2012-2015 B.Sc. in Computer Science University of Warsaw Top 1 University in Poland
  - Wide spectrum of courses taken: programming languages implementation, logic programming, assembly programming, microcontroller programming, functional programming and 40 other courses

# Skills

Kubernetes, Docker, Apache Kafka, bare-metal, ZFS, Linux kernel troubleshooting, LXC, Gitlab, programming languages with various level of expertise, including Python, C, Bash, Haskell, x86-64 assembly, Java, Scala, C++, Prolog, Perl, nroff

# **Projects and contributions**

- <u>Linux</u> implemented tsc\_early\_khz kernel parameter; to be included in 5.8 release
- <u>DragonflyBSD</u> Fixed a <u>bug in FAT filesystem</u> implementation, <u>ported sh(1)</u> <u>from FreeBSD</u>, implemented <u>support for special characters in passwords</u> during the installation, ported <u>reboot(8)</u> and <u>shutdown(8)</u> patches from FreeBSD, <u>fixed</u> <u>builds with -fno-common flag</u>, tested and <u>filed bugs</u>.
- Reverse-engineered and modified UEFI on own laptop disabling Wi-Fi whitelist check using <u>Ghidra</u> and <u>Bus Pirate</u>
- <u>gparted</u> diagnosed the root cause of crashes occurring when reading corrupted filesystems and implemented a feature in <u>glibmm</u> to fix gparted bug's root cause
- <u>burrower</u> adopted an abandoned project for monitoring Apache Kafka patched it to work with newer releases
- <u>minix scheduler enhancement</u> implemented processes' system time accounting, resulting in scheduler no longer favouring IO heavy processes
- <u>C-like language compiler</u> implemented a C-like-language to x86 compiler
- <u>multi-user UDP-based voice chat</u> real-time voice chat written in C implementing own transmission protocols and voice processing algorithms
- <u>brcmsmac bug report</u> one of the first bug reports which included compiling and testing kernels and submitting logs