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Getting Started with Linux Kernel Development

– Ghanshyam Agrawal

\$ whoami



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- Linux Kernel Enthusiast
- Linux user for the last 12 years
- Inspired thousands to switch to Linux



Ghanshyam
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Linux Kernel Mentorship Program



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The Linux Kernel Mentorship Program offers a structured remote learning opportunity to aspiring Linux Kernel developers.

Experienced Linux Kernel developers and maintainers mentor volunteer mentees and help them become contributors to the Linux Kernel.



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Contributions

<https://lore.kernel.org/lkml/?q=ghanshyam1898>

1. Found using the regex “todo|fixme”.
2. One of the previous mentees from the program helped.
3. Simple patch, yet four versions before getting accepted.
4. <https://lore.kernel.org/lkml/20231125090236.654605-1-g-hanshyam1898@gmail.com/>

Contributions | kselftest: alsa



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1. Found using
`make -j8 -C tools/testing/selftests TARGETS=alsa`
2. Good first patch
3. <https://lore.kernel.org/lkml/20231217080019.1063476-1-ganshyam1898@gmail.com/>



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Syzkaller

An unsupervised coverage-guided kernel fuzzer

Why do we need it

- Syzkaller is a fuzzer. It tries to uncover bugs by reaching execution paths that are hard to cover with manual tests.
- Tries to crash the kernel using semi-random input on the system call API.

Syzkaller | Learning resources



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- [Syzkaller setup docs](#)
- [Running an external custom kernel in Fedora 32 under QEMU](#)
- [Finding Linux Kernel Bugs with Syzkaller](#)
- [GDB on the Linux Kernel](#)

A very special thanks to my mentors



Shuah Khan

Shuah Khan is an experienced Linux Kernel developer, maintainer, and contributor.

She maintains Kernel Selftest, USB over IP, and cpupower tools. She is an active contributor to the Linux media sub-system.



Ivan Orlov

Open-source developer with contributions into the Linux Kernel, OpenSBI and U-Boot

Awardee of All-Russian programming olympiad's regional stage



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