UNIVERSITAS
GADJAH MADA
**Rancang Bangun Sistem Smart Cat Feeder Berbasis Internet of Things (IoT) Sebagai Pendukung Mitigasi
Risiko Feline Lower Urinary Tract Disease (FLUTD) pada Kucing**
Endhisa Ocha Jauhary, Ir. Ardhi Wicaksono Santoso, S.Kom., M.Cs..
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

DAFTAR PUSTAKA

[1] L. Freeman *et al.*, "WSAVA Nutrition Assessment Guidelines 2011," *J. Small Anim. Pract.*, vol. 00, no. June, pp. 1–12, 2011.

[2] M. G. Cline *et al.*, "2021 AAHA Nutrition and Weight Management Guidelines for Dogs and Cats," *J. Am. Anim. Hosp. Assoc.*, vol. 57, no. 4, pp. 157–178, 2021, doi: 10.5326/JAAHA-MS-7232.

[3] S. Taylor *et al.*, "2025 iCatCare consensus guidelines on the diagnosis and management of lower urinary tract diseases in cats," *J. Feline Med. Surg.*, vol. 27, no. 2, pp. 1–36, 2025, doi: 10.1177/1098612X241309176.

[4] H. Plumeriastuti, S. P. Novitasari, Arimbi, M. N. Yunita, I. S. Hamid, and P. A. Wibawati, "Risk Factors and Incidence of Feline Lower Urinary Tract Disease (FLUTD) in Sahabat Satwa Genteng Animal Clinic," *J. Med. Vet.*, vol. 6, no. 1, pp. 15–20, 2023, doi: 10.20473/jmv.vol6.iss1.2023.15-20.

[5] S. A. S. Dodd, C. Grant, S. K. Abood, and A. Verbrugghe, "Case Report: Application and Limitations of a Plant-Based Diet Formulated for a Cat With Feline Lower Urinary Tract Disease," *Front. Vet. Sci.*, vol. 8, no. April, 2021, doi: 10.3389/fvets.2021.658265.

[6] P. Pico-Valencia and J. A. Holgado-Terriza, "The Internet of Things Empowering the Internet of Pets—An Outlook from the Academic and Scientific Experience," *Applied Sciences (Switzerland)*, vol. 15. Multidisciplinary Digital Publishing Institute (MDPI), Feb. 2025. doi: 10.3390/app15041722.

[7] O. E. Castillo-Arceo, R. U. Renteria-Flores, and P. C. Santana-Mancilla, "Design and Development of a Smart Pet Feeder with IoT and *Deep learning* †," *Eng. Proc.*, vol. 82, no. 1, pp. 4–9, 2024, doi: 10.3390/ecsa-11-20487.

[8] A. A. Zainuddin, Muhammad Nur Badri Mahazir, Mohamad Aiman Akim Adanan, Mohd. Izzuddin Mohd. Tamrin, Mohammad Adam Haikal Zulkfli, and Muhammad Hazim Amin Samsudin, "Design and Implementation of a *Mobile*-Controlled IoT Smart Pet Feeder for Busy Pet Owners," *Malaysian J. Sci. Adv. Technol.*, pp. 498–505, Dec. 2024, doi: 10.56532/mjsat.v4i4.383.

[9] "Nutrition toolkit Global Nutrition Toolkit Following on from the launch of the WSAVA's Global Nutrition Guidelines in 2011, its Global Nutrition."

[10] D. Brooks *et al.*, "2014 AAHA weight management guidelines for dogs and cats," *J.*

UNIVERSITAS
GADJAH MADA
**Rancang Bangun Sistem Smart Cat Feeder Berbasis Internet of Things (IoT) Sebagai Pendukung Mitigasi
Risiko Feline Lower Urinary Tract Disease (FLUTD) pada Kucing**
Endhisa Ocha Jauhary, Ir. Ardhi Wicaksono Santoso, S.Kom., M.Cs..
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Am. Anim. Hosp. Assoc., vol. 50, pp. 1–11, Jan. 2014, doi: 10.5326/JAAHA-MS-6331.

[11] K. T. yun Teng, D. C. Brodbelt, D. B. Church, and D. G. O'Neill, "Life tables of annual life expectancy and risk factors for mortality in cats in the UK," *J. Feline Med. Surg.*, vol. 26, no. 5, May 2024, doi: 10.1177/1098612X241234556.

[12] M. Wall, N. J. Cave, and E. Vallee, "Owner and Cat-Related Risk Factors for Feline *Overweight* or Obesity," *Front. Vet. Sci.*, vol. 6, Aug. 2019, doi: 10.3389/fvets.2019.00266.

[13] R. George, "New Global Guidelines to be Unveiled at WSAVA 2023."

[14] A. J. German, G. R. T. Woods, J. Flanagan, and V. Biourge, "Maintenance energy requirements in cats following controlled weight loss: An observational study," *Vet. J.*, vol. 273, Jul. 2021, doi: 10.1016/j.tvjl.2021.105691.

[15] P. H. Marchi *et al.*, "Retrospective Study of Energy Requirement Recommendations for Dogs in a Brazilian Veterinary Hospital (2013-2025).," *Anim. an open access J. from MDPI*, vol. 15, Jul. 2025, doi: 10.3390/ani15152226.

[16] M. Olson, "Energy Calculations:Gauging the Proper CaloricIntake for Patients," *Today's Vet. Nurse*, vol. 5, no. 3, pp. 16–22, 2022.

[17] T. Sadek, B. Hamper, D. Horwitz, I. Rodan, E. Rowe, and E. Sundahl, "Feline Feeding Programs: Addressing behavioral needs to improve feline health and wellbeing," *J. Feline Med. Surg.*, vol. 20, pp. 1049–1055, Nov. 2018, doi: 10.1177/1098612X18791877.

[18] M. Delgado, M. J. Bain, and C. T. Buffington, "A survey of feeding practices and use of food puzzles in owners of domestic cats," *J. Feline Med. Surg.*, vol. 22, pp. 193–198, Feb. 2020, doi: 10.1177/1098612X19838080.

[19] B. Macleod, L. J. Laven, R. A. Laven, and K. E. Hill, "Understanding the current evidence base for the commonly recommended management strategies for recurrent feline idiopathic cystitis: a systematic review," *New Zealand Veterinary Journal*, vol. 73. Taylor and Francis Ltd., pp. 233–245, 2025. doi: 10.1080/00480169.2025.2477542.

[20] A. Witzel-Rollins, M. Murphy, C. M. Springer, T. D. Moyers, and J. D. Albright, "Evaluation of a pet-separating automatic feeder and high-frequency meal feeding for weight loss in multi-cat households," *J. Feline Med. Surg.*, vol. 24, pp. e281–e288,

UNIVERSITAS GADJAH MADA
Rancang Bangun Sistem Smart Cat Feeder Berbasis Internet of Things (IoT) Sebagai Pendukung Mitigasi Risiko Feline Lower Urinary Tract Disease (FLUTD) pada Kucing
Endhisa Ocha Jauhary, Ir. Ardhi Wicaksono Santoso, S.Kom., M.Cs..
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Aug. 2022, doi: 10.1177/1098612X221105046.

[21] M. M. O. Hernando and A. M. Sakti, "PERANCANGAN SISTEM INSTRUMENTASI PADA PROTOTIPE PET FEEDER MENGGUNAKAN *LOAD CELL* Arya Mahendra Sakti Abstrak," *J. Tek. Mesin Unesa*, vol. 14, no. 3, pp. 1–6, 2025, [Online]. Available: https://ejournal.unesa.ac.id/index.php/jtm-unesa/article/view/72166.

[22] T. Yuares, R. Rusmayanti, A. Zakiy, T. Hakim, and U. S. Karawang, "PENGEMBANGAN SISTEM SMART PET FEEDER MENGGUNAKAN BLYNK," vol. 14, no. 1, 2026.

[23] A. S. Sri Hartanto, "Rancang Bangun Timbangan Digital *Load cell* Berkapasitas 20 kg Berbasis Modul HX711," vol. 12, no. 2, 2024.

[24] Y. Mukhammad, A. Santika, and S. Haryuni, "Analisis Akurasi Modul Amplifier HX711 untuk Timbangan Bayi," *Med. Tek. J. Tek. Elektromedik Indones.*, vol. 4, no. 1, pp. 24–28, 2022, doi: 10.18196/mt.v4i1.15148.

[25] National Research Council, *Nutrient Requirements of Dogs and Cats*. National Academies Press, 2006. doi: 10.17226/10668.

[26] C. A. T. Buffington, J. L. Westropp, D. J. Chew, and R. R. Bolus, "Clinical evaluation of multimodal environmental modification (MEMO) in the management of cats with idiopathic cystitis," *J. Feline Med. Surg.*, vol. 8, pp. 261–268, Aug. 2006, doi: 10.1016/j.jfms.2006.02.002.

[27] L. Van Vertloo, "Lower Urinary Tract Disease in Cats - Urinary System - Merck Veterinary Manual," https://www.merckvetmanual.com/urinary-system/noninfectious-diseases-of-the-urinary-system-in-small-animals/lower-urinary-tract-disease-in-cats?query=lower%20urinary%20tract%20disease%20cats.

[28] L. Freeman *et al.*, "WSAVA Nutritional Assessment Guidelines," *J. Small Anim. Pract.*, vol. 52, pp. 385–396, Jul. 2011, doi: 10.1111/j.1748-5827.2011.01079.x.

[29] WSAVA, "Nutrition Guidelines - WSAVA," https://wsava.org/global-guidelines/global-nutrition-guidelines/.

[30] WSAVA, "Body Condition Score in Cats."

[31] J. W. S. Bradshaw, "The evolutionary basis for the feeding behavior of domestic dogs (Canis familiaris) and cats (Felis catus)," in *Journal of Nutrition*, American Institute of Nutrition, 2006. doi: 10.1093/jn/136.7.1927s.

UNIVERSITAS
GADJAH MADA
**Rancang Bangun Sistem Smart Cat Feeder Berbasis Internet of Things (IoT) Sebagai Pendukung Mitigasi
Risiko Feline Lower Urinary Tract Disease (FLUTD) pada Kucing**
Endhisa Ocha Jauhary, Ir. Ardhi Wicaksono Santoso, S.Kom., M.Cs..
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

[32] D. L. Zoran, "The carnivore connection to nutrition in cats," *Journal of the American Veterinary Medical Association*, vol. 221. American Veterinary Medical Association, pp. 1559–1567, Dec. 2002. doi: 10.2460/javma.2002.221.1559.

[33] "What is the Internet of Things (IoT)? IBM," https://www.ibm.com/think/topics/internet-of-things.

[34] "What Is IoT (Internet of Things)?," https://www.cisco.com/site/us/en/learn/topics/industrial-iot/what-is-iot.html.

[35] Google LLC, "Firebase Documentation," https://firebase.google.com/docs.

[36] G. LLC, "Firebase Authentication," https://firebase.google.com/docs/auth?hl=id.

[37] G. LLC, "Firebase Realtime Database," https://firebase.google.com/docs/database?hl=id.

[38] G. LLC, "Firestore | Firebase," https://firebase.google.com/docs/Firestore?hl=id.

[39] D. Ferraiolo, R. Kuhn, and R. Chandramouli, "Role-Based Access Control (1st ed.)," *https://csrc.nist.gov/pubs/book/2003/01/rolebased-access-control/final*, 2003.

[40] D. Ferraiolo, R. Kuhn, and R. Chandramouli, "Role-Based Access Control (2nd ed.)," *https://csrc.nist.gov/pubs/book/2007/01/rolebased-access-control/final*, 2007.

[41] "Mulai Menggunakan Aturan Keamanan Cloud Firestore | Firebase," https://firebase.google.com/docs/Firestore/security/get-started.

[42] G. LLC, "Firebase Client."

[43] "React," https://react.dev/learn.

[44] "The starting point for learning TypeScript," https://www.TypeScriptlang.org/docs/.

[45] "Tailwind CSS," https://tailwindcss.com/docs/installation/using-vite.

[46] "React Router," https://reactrouter.com/home.

[47] "Recharts," https://recharts.github.io/en-US/guide/getting-started/.

[48] "createContext – React," https://react.dev/reference/react/createContext.

[49] "Protokol I2C."

[50] O. L. Davies and R. G. Brown, "Statistical Forecasting for Inventory Control.," *J. R. Stat. Soc. Ser. A*, vol. 123, p. 348, 1960, doi: 10.2307/2342487.

[51] D. C. M. C. L. J. M. Kulahci, *Introduction to Time Series Analysis and Forecasting*. John Wiley & Sons. Inc.. Hoboken. New Jersey., 2008.

[52] C. Technologies., "HC-SR04 Ultrasonic Sensor," https://components101.com/sensors/ultrasonic-sensor-working-pinout-datasheet.

UNIVERSITAS
GADJAH MADA
**Rancang Bangun Sistem Smart Cat Feeder Berbasis Internet of Things (IoT) Sebagai Pendukung Mitigasi
Risiko Feline Lower Urinary Tract Disease (FLUTD) pada Kucing**
Endhisa Ocha Jauhary, Ir. Ardhi Wicaksono Santoso, S.Kom., M.Cs..
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

[53] Bogde, "bogde/HX711: An Arduino *library* to interface the Avia Semiconductor HX711 24-Bit Analog-to-Digital Converter (ADC) for Weight Scales.," https://github.com/bogde/hx711.

[54] Avia Semiconductor, "24-bit analogto-digital converter (ADC) designed for weigh scales," 2016.

[55] S. Al-Mutlaq and A. the Giant, "*Load cell* Amplifier HX711 Breakout Hookup Guide," https://learn.sparkfun.com/tutorials/load-cell-amplifier-hx711-breakout-hookup-guide.

[56] "ESP-IDF Programming Guide□," https://docs.espressif.com/projects/esp-idf/en/latest/esp32/.

[57] A. Industries, "Adafruit_SH110x: Arduino *library* for SH110x based monochrome OLEDs," https://github.com/adafruit/Adafruit_SH110x.

[58] Adafruit Industries., "Adafruit_SSD1306: Arduino *library* for SSD1306 monochrome 128x64 and 128x32 OLEDs," https://github.com/adafruit/adafruit_ssd1306.

[59] Madhephaestus, "ESP32*Servo*: Arduino-compatible *servo library* for the ESP32," https://github.com/madhephaestus/ESP32*Servo*.

[60] V. JS, "Vite," https://vite.dev/.

[61] Motion Foundation, "Motion: JavaScript & React animation *library*," https://motion.dev/.

[62] Recharts Group, "Recharts: Redefined chart *library* built with React and D3," https://recharts.github.io/.

[63] I. Remix *Software*, "React Router Documentation," https://reactrouter.com/.

[64] React, "Lucide Icons," https://lucide.dev/guide/react/.

[65] G. LLC, "Cloud Storage for Firebase," https://firebase.google.com/docs/storage?hl=id.

[66] G. LLC, "Memahami Aturan Keamanan Firebase Realtime Database," https://firebase.google.com/docs/database/security.

[67] WSAVA, "Nutrition Guidelines - WSAVA," https://wsava.org/global-guidelines/global-nutrition-guidelines/.

[68] H. Michael S, T. Craig D, R. Rebbecca L, R. Philip, and N. Barbara J, *Small Animal Clinical Nutrition*. 2010.

UNIVERSITAS
GADJAH MADA
**Rancang Bangun Sistem Smart Cat Feeder Berbasis Internet of Things (IoT) Sebagai Pendukung Mitigasi
Risiko Feline Lower Urinary Tract Disease (FLUTD) pada Kucing**
Endhisa Ocha Jauhary, Ir. Ardhi Wicaksono Santoso, S.Kom., M.Cs..
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

[69] G. S. Machado, J. G. Pezzali, B. Schoreder, C. Ongaratto, L. M. Villela, and L. Trevizan, "Monitoring energy requirement and weight gain in adult cats after ovariectomy," *World's Vet. J.*, vol. 7, no. 2, pp. 36–39, 2017, doi: 10.5455/wvj.20170492.

[70] T.-T. Nguyen *et al.*, "Control and Monitoring of a Two-Axis Ac-*Servo* Positioning System for *Dispensing* Applications Using Plc S7-1200," *Indones. J. Eng. Sci.*, vol. 5, no. 2, pp. 087–103, 2024, doi: 10.51630/ijes.v5i2.146.

[71] M. R. Mubarok and M. Amiruddin, "Analisis Respon Pembacaan Sensor Beban (*Load cell*) dengan Menggunakan Autonics TK4S," 2026, doi: 10.5281/zenodo.14564478.

[83] Google LLC, "Manage indexes in Cloud Firestore," https://firebase.google.com/docs/Firestore/query-data/indexes?hl=id